

VICTOR

Professional Amiga User MAGAZINE

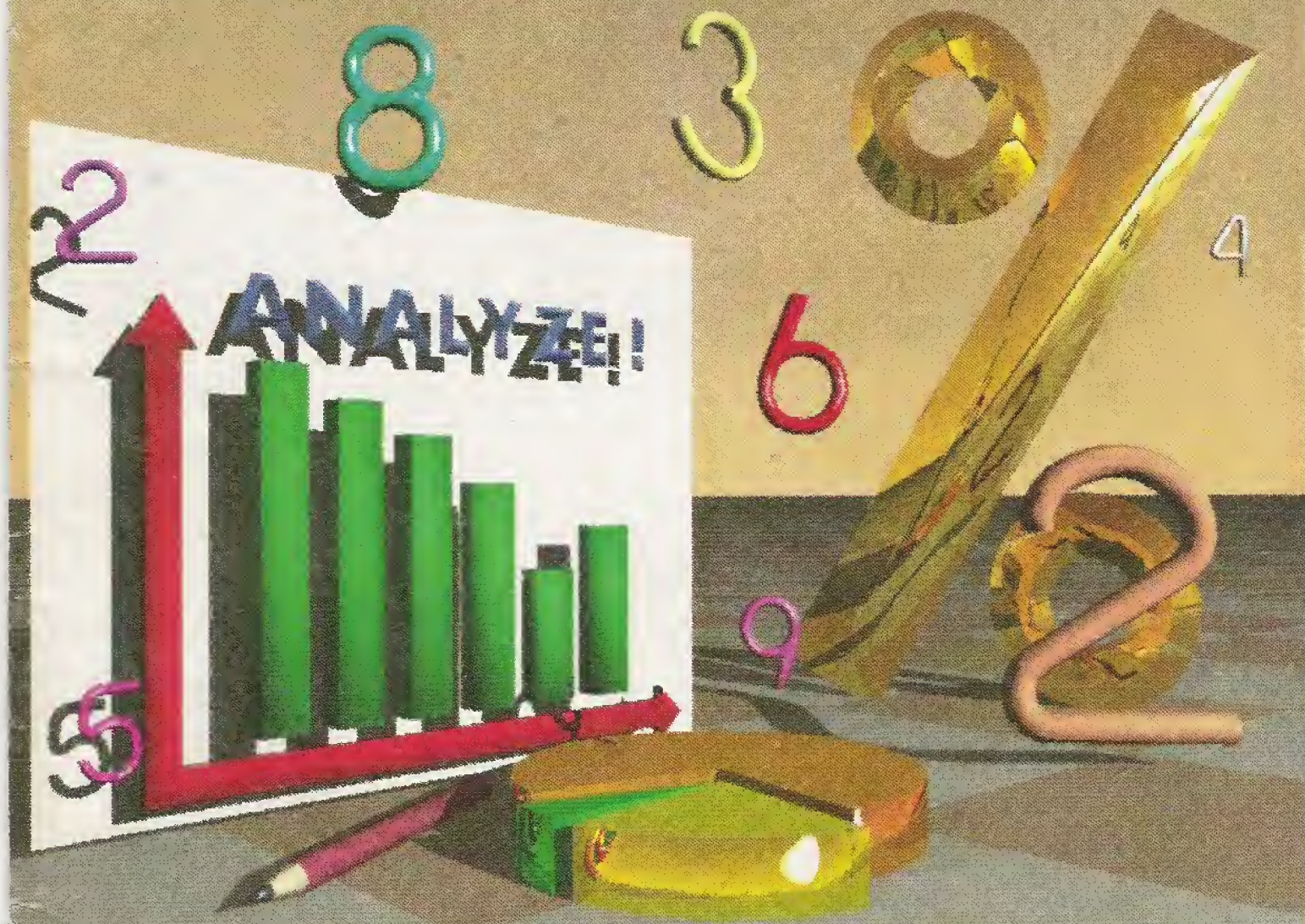
December/January, 1991

Volume 1 Number 2

A Gareth Powell Publication

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Published using the Amiga



☆ An Introduction to Spreadsheets

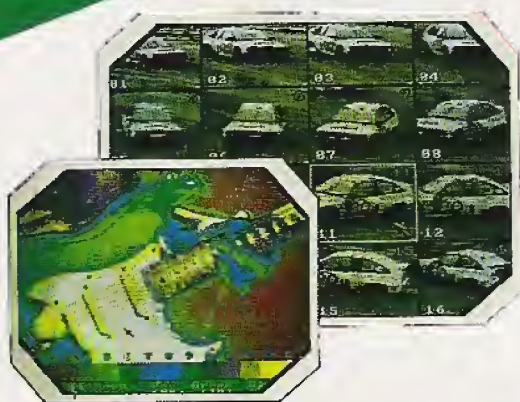
☆ Understanding Sound Digitising

☆ Frame Grabbers ☆ Desktop Publishing

* Recommended Retail Price Only

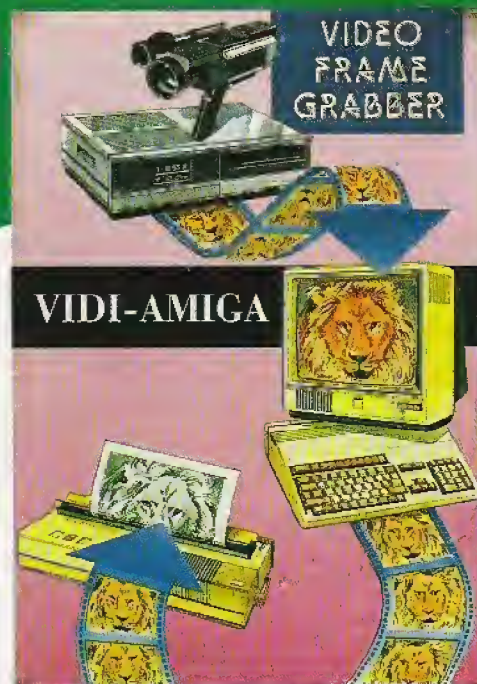
How does this grab you?

VIDI FRAME GRABBER



VIDI is the missing link in your graphics presentations. Using VIDI, a cable and your computer, you can capture video images from ANY source that outputs simple video signals. Cameras or videos, it doesn't matter, VIDI will grab a perfect image in 16 shades instantly! You don't have to pause your video, you don't even have to have a digital VCR. Multiple frames can be stored into memory for saving as an animation sequence, and the software allows full control of brightness and contrast to ensure top quality images. The uses for VIDI are virtually endless; Desktop Publishing, Desktop Video, graphics productions, program enhancements, animation; the limits are your imagination!

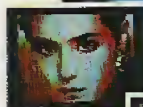
TO INTRODUCE VIDI AMIGA INTO THE AUSTRALIAN MARKET, PACTRONICS ARE GIVING AWAY, ABSOLUTELY FREE, VIDICHROME, THE AMAZING SOFTWARE UPGRADE THAT ALLOWS YOU TO DIGITISE VIDEO IN FULL COLOUR!!



VIDI RGB COLOUR SPLITTER

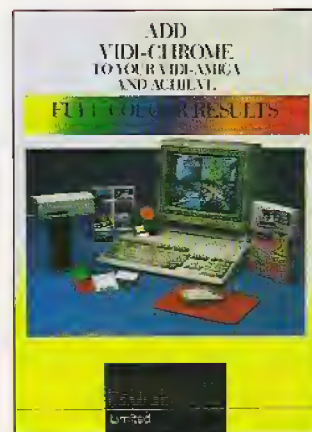
If you have a colour video camera, the VIDI COLOUR SPLITTER is the ideal companion to VIDICHROME. The RGB COLOUR SPLITTER

totally eliminates the colour filters normally required to digitise in colour. It does this by taking in a colour signal and then stripping it to the three colour bands, Red, Blue and Green. Using this, you can grab full colour frames faster than ever thought possible. Take a rock solid image into your camera or from your video, and seconds later, PRESTO!! H.A.M. images better than you'd thought possible.



VIDI- CHROME

If you thought VIDI was good, wait for this! VIDICHROME allows you to digitise in FULL COLOUR! Using a series of coloured filters, VIDICHROME takes images, even from a black and white camera, and displays them in H.A.M. mode! It fully supports PAL displays, and can simultaneously display 4,096 colours on screens up to 320 x 512 size. For those of you with a colour camera, you may like to take advantage of the time saving offered by the RGB colour splitter.



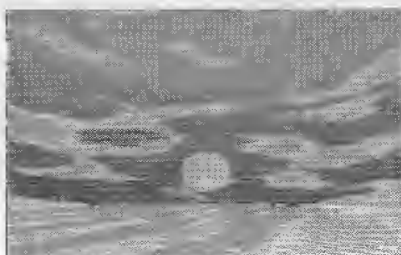
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Art Gallery

See the latest Amiga graphics and ray-traced images 8

FRONT COVER

Ray traced in Sculpt 4D (850 x 1150 pixels in 24-Bit mode), colour separated using The Art Department and ReSep. Model designed by Peter Ward.



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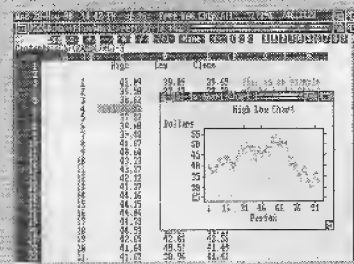
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Editor in Chief Andrew Farrell
Production Adam Rigby
and Vanessa Farrell
Office Services Debbie Bullen
Advertising Manager Ken Longshaw
Printer Konrad International Printing
Distribution NETWORK
Editorial Enquiries: (02) 879 7455
FAX (02) 816 4714
P.O Box 288, Gladesville 2111

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Professional Amiga User

First Word

Amiga computing is racing into the world of 24-bit colour. Commodore have missed their opportunity to lead the way and third party companies have taken advantage of this gap to set new limits and create winning products of their own.

Support for 24-bit colour was limited to desktop publishing output and high end high cost frame buffers. Now there is a whole range of NTSC 24-bit displays and paint programs to match.

As we reported last issue, Gary Rayner, a local developer, is about to release a PAL unit called Colourburst early in the new year. Various versions of the device will be manufactured, marketed and distributed by another local company, Memory and Storage Technology.

Software support has also followed hot on the heels of this amazing new display device. Megapaint will be adapting their 24-bit paint program to support the PAL unit. ASDG, publishers of scanning software and the powerful *Art Department* have plans to add code to handle the Colourburst too.

The new *Professional* version of the *Art Department* handles a number

of 24-bit displays, as well as 4000 line 35mm laser-slide generators. All this seems to bode well for the Amiga as a professional machine in the presentation and graphics areas previously dominated by the Macintosh and PC.

Commodore, here's another one of those fleeting opportunities to get behind one of these products and push specific solutions the Amiga can now offer.

In this issue of *Professional Amiga User* we have further enhanced our design, kicked off a couple of regular columns and managed to produce an even better front cover. Our first full-blown feature story on a product solution appears as an Introduction to Spreadsheets. Next month, Don Sutton will continue to expand on this theme with a comparison of the leading spreadsheet products.

Keep those letters rolling in with your comments and ideas. Thank you to all those readers who have written thus far. We've made it to issue three - and now we've gathered the industry support we need to keep it going. Why not subscribe and ensure your personal copy every month.

What is 24-Bit Anyway?

Graphic display modes are often described according to their resolution, or amount of detail. For example, 640 x 512 mean there are 640 picture elements or pixels across the x axis and 512 down the y.

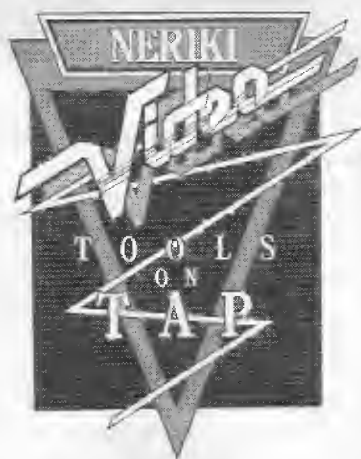
Apart from each of these pixels being off or on, they can also be described as being a certain colour. The colour resolution is limited by the largest number which may be stored in the RAM allotted to each pixel for colour memory.

In decimal the largest number you could store in three digits would be 999, or 10 to the power of 3. In binary, or base two, it's two to the power of three, which is eight. A 3-bit display may have up to eight colours, a 4-bit display up to 16 and a 24-bit display may have up to 16,777,216 colours. Of course although the image may physically store this much information about the colour detail, unless your video chip is actually looking at this information, not all the available colours may be displayed.

At the moment, most programs display 24-bit images as HAM pictures, by converting the image to produce a 12-bit version.



☛ Left to Right: Gary Rayner, designer of *ColourBurst*, the Australian 24-bit PAL frame buffer; Adam Rigby - *Professional Amiga User* desktop publishing extraordinaire and Andrew Farrell, magazine editor and Amiga crusador.



Never again will you have to worry about illegal colours! This is the computer software package that knows what video people want.

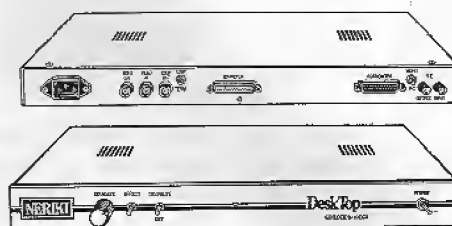
Designed to multi-task with other software and run on any model Amiga computer, Video Tools on Tap offers you forty much needed utilities and effects. The package runs in the background (when multi-tasked) without affecting the display until you tell it to do so. No graphics memory is used when inactive.

Neriki Video Tools on Tap gives new dimensions to "Desktop video application". It is now possible for all users of computers in video to produce a professional product without the frustrations of the past!

FEATURES

- Auto detect of illegal colours.
 - Fixes illegal colours in existing IFF files.
 - SMPTE (NTSC) and EBU (PAL) colour bars on request.
 - Blue control bars, black screen, grey scale on request.
 - Variable timing in fade up and down.
 - Vertical and horizontal adjustments from keyboard
 - Vertical and horizontal flips
 - Supports screen overscan.
 - Audio tone.
 - Auto detect for PAL and NTSC software.
- And much more!

Independent Tests World Wide RATE **NERIKI Genlocks** **"Superior"**



Many claims are made in today's market on the output quality of genlocks. Yet independent test, carried out by professional evaluators world wide, have deemed that most do not meet broadcast specifications. One brand of genlock *that does qualify* for the prestigious "professional" category is the NERIKI, which is proudly manufactured in Australia.

All NERIKI GENLOCKS meet true broadcast standards and designed specifically for our PAL system and are not modified from the American NTSC system. NERIKI GENLOCKS encode at a full 5.5Mhz bandwidth and deliver a 600 line resolution. Even third generation tapes are considered "broadcast quality".

FEATURES

- Will operate with any model Amiga, including the 3000
- Features S-VHS in and out, composite in and out or a mix of S-VHS and composite with easy switchover (Desktop model)
- Does not require any of the Amiga's internal slots for installation and is independently powered
- Simple front panel controls with effect key, key invert and dissolve.
- Models available for upstream (with RGB) and downstream operations.
- AUSTRALIAN MADE with 12 months warranty.

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What's New?

HyperHelper for AmigaDOS 2.0

► INOVAtronics, the company that brought you *Can-Do*, has unveiled a new "hyper-text" help system *HyperHelper* for AmigaDOS v2.0 (or 1.3) with OS version specific help for all model Amigas.

It's the first online reference guide to cover version 2.0 of the C, System, and Utilities directories, as well as Preferences.

HyperHelper displays its list of main topics in a small window. Click on one and a list of sub topics (C:commands, for example) is shown.

Click on one of those and you get expertly written, fully cross-referenced help. *HyperHelper* also includes powerful AREXX support and a simple to use CLI interface that gives you the help you need, whenever and wherever you need it.

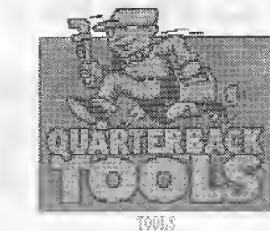
Also included: *Run-N-Play*, a "file requester" that shows pics, edits text files, plays sounds and runs applications and *Launch Pad*, a user-configurable menu on Workbench that runs your applications.

For more information call Computermate on (02) 457 8388.

Quarterback Tools

► Central Coast Software has just released *Quarterback Tools*, a collection of disk maintenance tools designed to maximize the speed and reliability of Amiga hard disk and floppy disks.

Quarterback Tools repositions your files to optimum locations on the disk. It eliminates file fragmentations and consolidates disk free space. It re-



covers deleted files easily and safely; "unformats" disks you formatted by mistake; and finds and fixes corrupted directories.

Quarterback Tools searches the entire disk for errors, marks bad areas "out of service", and identifies affected files.

It reformats all types of disks for either new or old Amiga Filing systems. The program cures disk validation problems and key checksum error.

Quarterback Tools provides a choice of optimization algorithms to suit your needs. It multitasks from Workbench or CLI, but does not use all available memory.

Quarterback Tools provides an AREXX interface for 'power users'. It performs on any AmigaDOS volume of any size.

Quarterback Tools requires Workbench 1.2 or later, and supports Workbench 2.0. It runs on any Amiga with at least 512KB.

It works with all Amiga hard drives and floppy drives and all Amiga filing systems.

Quarterback Tools sells for \$99 and is distributed through Computermate (02) 457 8388.

Electric Thesaurus

► *Softwood's Electric Thesaurus* utilizes the "Roget's II Electronic Thesaurus" database and search engine developed by Houghton

Mifflin Company, a leading supplier of Computer-Aided Proofreading (CAPR) software and respected textbook publisher.

Electric Thesaurus contains over 500,000 synonyms and offers concise definitions for each meaning of a queried word.

Each definition includes its part-of-speech and a list of accurate synonyms in their properly inflected forms.

An AREXX port with over 15 commands is included along with the ability to send scripts to other programs, plus Clipboard Device (Copy/Paste) support to provide Thesaurus functionality to programs that do not have a Thesaurus.

Accurate, useful definitions are provided so the user may choose the most precise meaning. There's a thorough selection of carefully chosen synonyms for each definition - assuring users of an appropriate choice. Also includes parts-of-speech information - identifying the word as a

noun, verb, adjective, or adverb.

The appropriate grammatical inflection is listed for all words. Synonyms are ordered by frequency of use in the English language so users have the choice of frequently used words or less common choices.

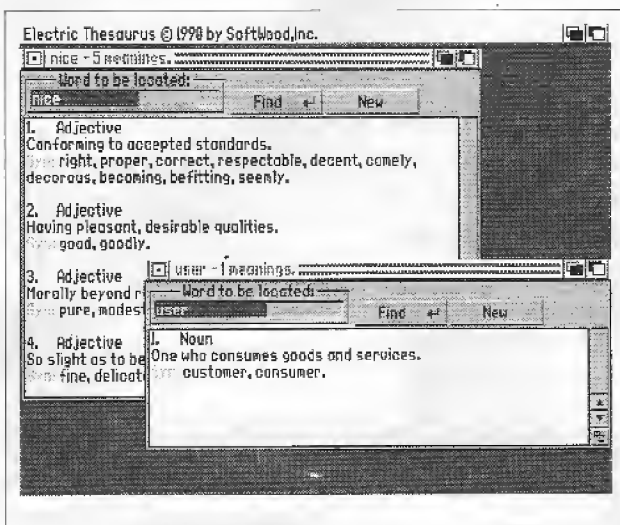
Each selection is cross-referenced to give all synonyms for the selected meaning of a word.

Electric Thesaurus omits slang, vulgar, and sexist terms which may be offensive in the business and home environment. The program works with both Workbench 1.3 and Workbench 2.0.

It requires an Amiga with at least 512K and one disk drive. Use of a hard disk is strongly recommended. If a hard disk is not available, *Electric Thesaurus* can be operated from RAM. Softwood products are handled by Dataflow on (02) 331 6153

New 1930 Monitor for A3000

► The 1950 is the multi-scan monitor that's already available for the A3000 and



it has the ability to run at both 31.5 KHz and 15 KHz (needed for old display modes and the super-hires modes on the A500/2000s with the new Denise chip).

For A3000 owners, it seems that the 1930, which is a VGA-only monitor with sound ports on the side, is the monitor of choice as it plugs into the 31.5 KHz port and works fine in all modes. Not yet released here, and no prices known.

Scientific Software

► If you're looking for something unusual, a complete line of scientific and engineering enhancements for the Amiga are available.

The range of programs include high-performance data-acquisition and process-control, GPIB IEEE-488, *DigiScope* and other signal analysis software tools and Laserdisk control software. For more information contact ACDA Corporation, 220 Belle Meade Ave, Setauket NY 11733 USA. Tel: 516 689 7722.

Statistical and Management Software

► More of the same odd ball packages for the more serious user are available from LionHeart. They have two series. The Professional Series includes Biometrics; Econometrics; Business Stats; descriptive Stats; Experimental stats; Decision Analysis Techniques; Project Planner; Quality Control & Industrial experiments; Risk & Business Simulations; Forecasting & Time-series; Sales & Market Forecasting.

For the more Technical - ANOVA; ARIMA Meth-

ods; Cluster Analysis; Decision Trees & Tables; Parameter & Tolerance design; Graphics & File Transfers; Linear Programming; Matrix Operations; Multivariate Analysis; Optimization; Regression; Inventory. All come with weighty manuals. More information is available from LionHeart Press, Inc., P O Box 379, Alburg, VT, 05440. USA. Tel: (514) 933 4918 Fax: (514) 939 3087

PD Raytrace Editor "World-3D"

► This is an interactive graphics editor for the PD ray-tracing program *DBW-RENDER* which needed a good front end to access its undoubted power. It allows you to design, edit and preview scenes and create a library of often used shapes and objects. More info from: Synthetic Reality, P O Box 6066, St. Cloud, MN 56302. Tel: 612 2599499.

HAM it up!

► This is a tutorial, colour reference guide, blend and creation tool, preferences printer utility and colour displayer.

It's also a video colour chart that can be used to check the quality of any genlock output and to check colour DTP output to any printer. Price is US\$39.95, more info from: Delta Graphics, Inc., 48 Dighton St, Brighton, MA 02135 USA. Tel: 617 2541506.

Amiga Graphics Reference Card

► Another low-cost good idea - costs US\$1.95 and is a folded card with information about all aspects of

Amiga graphics and animation, arranged for quick reference. The card contains facts on IFF file sizes, graphics memory sizes, colour model diagrams, font sizes and line widths, video frame rates, DPaint hints, etc. Get it from: Vidia, P O Box 1180, Manhattan Beach, CA 90266 USA. TEL: (213) 3797139.

"Floptical Drive"

► This 3.5" SCSI drive can read and write to high density 20MB floptical disks, standard 880K disks, and 3.5" High density disks.

Versatile! The Flopticals are removable. Sounds like a dream of a drive. Not yet released by the makers Insite Peripherals - wait for 1991.

Trumpcard Professional

► The makers claim that this non-DMA SCSI hard drive controller can play back a four minute, 30 frames per second 320x200 HAM animation from a hard disk..

Pretty smooth. It has its own SCSI-ID jumpers allowing several computers to share a single hard drive. More info from: Interactive Video Systems, 11612 Knott Ave, suite 13, Garden Grove, CA 92641 USA. TEL: (714) 8907040.

Xetec's CD-ROM

► If you can't wait for Commodore's BABY CDTV system, you can add this to your Amiga. Capacity of 650 megabytes per disk, and of course it can play audio CDs via headphones or linked up to your stereo system.

Comes with a built-in power supply and dual SC-

SI connectors for daisy-chaining, and if you like you can get the internally fitted version. The internal system costs US\$599 and the external system US\$699. They also put the entire Fish Collection on a disk for you too. More info from: Xetec, 2804 Arnold Road, Salina, Ks. 67401 USA.

High Density Disk Drive

► So far the one and only for the Amiga, supports both standard disks and 1.52 Meg disks, with a two-way LED indicator which shows green for reading and red for writing and a smooth electronic ejection which waits until the drive stops writing before ejecting disks, nice safety feature.

Has daisy-chain capacity, MS-DOS compatibility, pass-thru connectors and will allow you to cram two 880K disks onto one HD disk, not a bad idea. What's more, you'll need one of these if you ever decide to run UNIX on your Amiga. More info from: Applied Engineering, P O Box 5100, Carrollton, TX 75011 USA. Tel: (214) 2416060

There is a new device driver which fixes a bug that prevented you using *QuarterBack* with the drive to, say, back up your hard disk - keep it in mind if you buy it.

Epson Scanner

► This GT-6000 is an A4 colour scanner with up to 256 grey scales in b/w mode. Has selectable halftoning and a zoom range from 50% to 200%, adjustable in increments of 1%. More news on this beast next issue. □

Graphics and Video Update



New Flicker-Fixer

► Have the daze (days) of interlace flicker been eliminated forever?

Well, it seems so. Commodore have released a version of a 'FlickerFixer' for the 2000 range of Amigas - known in the marketing departments as a display enhancer. (No one would dare suggest anything needed fixing!)

The A2320 is a video slot card - half card in size, much the same size as the MicroWay Flicker-Fixer. This card has not had a lot of press due to other cards and machines that Commodore have recently rolled out.

It has been designed to work in both PAL and NTSC machines automatically - and you can change video resolution mode under AmigaDOS 2.0 as long as you have the one Megabyte Agnus chip installed in your machine. All A2000s have been shipping with this chip for the past twelve months.

There are several advantages the A2320 has over Microway's Flicker-Fixer. It has full overscan support for both NTSC and PAL displays (768 x 489 for NTSC and 768 x 576 for PAL), and it automatically senses which

format the Amiga is using.

Then there is the automatic switching of de-interlacing of interlaced images when in interlace mode, and also the scan-doubling of non-interlaced images when in non-interlace modes that results in no video ghosting or smearing, which is a real plus for scrolling displays, games etc.

Also automatic genlock support (for both NTSC and PAL genlocks). For example, if an external genlock is connected to the Amiga the A2320 will de-interlace the Amiga's reference RGB output to provide a flicker free display.

The A2320 also works with the new ECS graphics modes such as 'Productivity' mode by automatically sensing the higher resolution and bypassing the Amiga generated 31.5Khz video to a multiscan monitor connected to the A2320's video output connector.

This allows the A2320 to work with this mode without moving cables or removing the video card as you might have to do with any other such systems.

The card also has a user-controlled bypass switch that allows its

owner to manually do the bypassing of the video data for the ECS 'Super-Hi-Res' modes, or any other graphics modes that you desire to bypass to the monitor.

This gives you the ability to do a 'before-and-after' enhancing effect. So you can see what a difference the A2320 can make on your graphics screens!

It will retail for \$299.00(US) in America, which is considerably cheaper than other units. The lower cost is due to the very high integration of the AMBER gate array and the special video memories that have only recently become available.

Incidentally, we have not been able to confirm with Commodore Australia the existence of this card, nor any Australian pricing or release date.

No doubt we will receive an evaluation unit as soon as they are available - in the meantime we'll continue to put up with the Microway alternative which does not support overscan, clashes with genlocking and drops some eight or so lines of the Amiga's display.

24-Bit Paint Support Grows

► News of products aimed at the 24-Bit market continues to filter through. Newtek's *Video Toaster* is continuing to capture the imagination of the United States market.

Rumour has it Commodore may even redesign the A3000 video slot to handle the *Toaster*, which is currently too big

to fit comfortably. Newtek are talking about a general release of their own 24-Bit paint package developed along the lines of *Digi-Paint*.

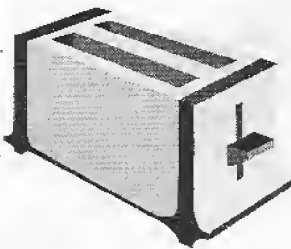
However, more exciting is a new animation program designed in co-operation with Allan Hastings, the original author of *Videoscape 3D*.

Early reports indicate it is one of the most powerful animation packages yet. Let's hope Newtek has different ideas about PAL versions of software - unlike their current policy of no time for PAL when it comes to the *Video Toaster*.

Perhaps a little pressure from Commodore subsidiaries and users in PAL countries could help fuel a little enthusiasm to change this point of view - or even hard dollars if it comes to that.

Impulse's 24-bit Graphics display board, the *FireCracker 24* board delivers up to 16.8 million colours to either RGB or NTSC compatible monitors.

Software that can already be used with this board are programs such as *Turbo Silver*, *Imagine*, & *The Art Department*. It will ship with a 24-bit paint program called *Light*". The board takes up a standard A2000 slot and is genlockable to the Amiga with a standard genlock. See Amazing



Computing (AC 5.9 P. 31) for a full discussion of this board.

Imagelink by Active Circuits can render 16 million colours animation directly to videotape. You can convert images between an "infinite" number of file formats. You can input directly from raytracing programs and take advantage of frame buffers. RRP is US\$229. More info: 106 Highway 71, Suite 101 Masquan, NJ 08736 USA Tel: 201 223 5999

Megapaint was developed by PseudoVision and gives control over Mimetics' FrameGrabber so you can capture images from video, then edit and display them in broadcast-quality (you guessed it) NTSC... Features multidirectional gradient fills with variable dithering, 16.7 million levels of transparency (that all?), blending, smoothing & colourising. More info from: 9319 E. Main, Spokane, WA 99206 USA TEL: (509) 9266623.

Octree are shipping *Caligari Broadcast*. Not

for the hobbyist at US\$3495, this example of "virtual reality" software is a rendering system based on direct, real-time interaction with objects, and is based on 5 modules, one of which, *Broadcast Rendering*, produces images in 16.7 million colours when used with a Targa *Frame-Buffer*. More info if you're game from: 311 W. 43rd St, Suite 904, New York, NY 10036. Tel: 212 262 3116.

Kodak Photo CD System

► The Eastman Kodak Company, in connection with Philips, recently announced a new photographic system that may well benefit Amiga graphics users 'real soon now'. Their '*Photo CD System*' will be able to scan 35mm images and write them to a compact disk.

These pictures can then be played back on a television with new Kodak CD players manufactured by Philips. It would

follow the output could also be fed into a digitiser or frame grabber.

The system will become available in 1992. Consumers will take their film to photofinishers for developing and receive standard prints as they do today. On request, the photofinishers will use new workstations to 'read' processed 35mm negatives and slides.

They will then 'write' digitised pictures onto Photo CDs. Consumers will receive a gold-coloured compact disc containing all the exposures on the roll.

The Photo CD will be packaged in an attractive 'jewel case' box, similar to those containing audio CDs.

The case will contain an index print cover sheet, with a grid that displays miniature pictures of all images on the Photo CD, each with a number showing its sequential position on the roll and on the disk.

The result will be playable on virtually any

personal computer world-wide equipped with CD ROM XA disc drives. (XA refers to 'eXtended Architecture' that permits audio and video to be included).

This will give professional and commercial customers easy access to photo quality images in computer formats.

Very high quality prints may also be made directly from the Photo CDs with Kodak thermal printers. Colour, sharpness, and granularity are similar to those of prints made on photographic paper from original negatives. Photo CDs will combine the best aspects of silver-halide and silicon technologies, and this is the answer for consumers who have wanted both the astonishing quality of 35mm photography plus the convenience of digital storage, display and manipulation.

It will also offer quality far superior to that of current electronic still photography systems, (no need to get rid of the In-

WHAT IS MEGADISC?

MEGADISC is a unique disk-publication designed to help beginners and veterans use their Amigas more productively and enjoyably. Dating from the early days of the Amiga, Megadisc is put together by long-term users who really know the machine and who can communicate that knowledge in a non-technical but informative way. Everything on Megadisc runs with a click of the mouse, and requires no special knowledge or equipment to run - except your Amiga. Anyone can use Megadisc profitably - students, hobbyists, teachers, Amiga veterans, and business people.

FREE CATALOGUE-ON-DISK - PUBLIC DOMAIN COLLECTION

Ask for our free Catalogue on disk. The Catalogue describes the contents of the various issues of Megadisc, gives information on how to make orders, and contains a full listing of our collection of public domain disks - over 1600 disks full of software, graphics, animations, source code, and much more. We have the best collection in the southern hemisphere. All these disks are available for ordering at \$5, or \$4 if you subscribe to Megadisc - no postage costs. Once you have a catalogue-disk, you can send it in at any time for updating.

WHAT IS MEGADOS?

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Graphics and Video Update

stamatic after all!). Kodak called its announcement "a turning point in the history of photography!"

Kodak Photo CD players will have features and audio performance equal to today's CD players.

Officials for the company said models could include such picture oriented features as random access viewing, zooming and panning, editing and others. Specific models and features will be described at the time of availability in 1992.

The first Kodak Photo CD player is expected to start at a list price under \$500(US). The Photo CD service will be offered through traditional photo finishing outlets worldwide. A disk containing 24 pictures could be priced 'comfortably below \$20'.

Pro Video Post

Shereff Systems has released its newest character generator, *Pro Video Post*, in a PAL version. The PAL version of *Pro Video Post* maintains the high standards and power of its NTSC counterpart by offering two generations of enhancements over Shereff Systems *Pro Video Plus PAL*.

Designed with post production in mind, *Pro Video Post PAL* adds a screen size of 720 horizontal pixels by 576 scan lines, real time digital video effects (DVE's), full screen picture manipulation tools, high resolution anti-aliased fonts, voice prompts, audio cues and Amiga Workbench compatibility.

Pro Video Post - PAL's on-line features include 16 resident fonts with En-

glish, German and Swedish character sets. Seven new on-line transitions, two or four colour font patterns, character by character style, size and a choice of 16 colours per page selectable from 4096.

Drop and cast shadows plus independent outline, 100 pages in memory for immediate access (up to 2600 pages with expanded memory). Design tile, wallpaper or mirror backgrounds or import graphics from paint or digitizing options.

Pro Video Post - PAL offers tremendous power and diversity in just a few key strokes. In a pre-production environment, any text page or imported graphic can be quickly reduced, enlarged, slanted, tilted, rotated, repositioned or mirrored. You may combine two or more screen manipulations onto one page as a backdrop!

In a post production setting *Pro Video Post - PAL* provides the user with the most widely used DVE routines, rendered and ready to take in seconds.

Selected by menu or voice prompts, any POST screen can be zoomed in or out, tumbled, twirled, flipped, compressed and more! Audio cues guide you through the set-up and indicate when a graphic is ready to take or a selection has been cancelled.

Pro Video Post PAL requires an Amiga computer system with one meg of chip RAM and two megs of fast RAM. An accelerator card is al-

so recommended.

Teleprompting by Amiga

Have you ever wondered how the US President or British Prime Minister can stand in front of an audience and confidently deliver a lengthy speech, apparently without notes? They're cheating, that's how!

They are in fact, reading every word from a special "head up" display. It's called head up because it doesn't require the speaker to look down and refer to notes. Keeping his or her head up maintains essential eye contact and, therefore, the attention of the audience.

The same trick is used by newsreaders on TV. They don't memorise every word; the notes they have on the desk are there just in case their specialised head up display, called a teleprompter, breaks down. To be truthful, often those notes don't contain text at all, and the newsreader looks down occasionally just for effect.

Until now, head up displays for speakers at conferences and meetings have been quite expensive, often beyond the budget of the company or organisation concerned. Now a Canberra based company, Presenter

Prompters, have released a low-cost head up display which is ideal for virtually any speaker or presenter.

The "front end" of the *Presenter 500 Head Up Display* is two glass display screens which are situated at eye level on ei-

ther side of the speaker's lectern. The text appears on these screens in a large, easy-to-read format, and the presenter delivers the speech, apparently without any notes.

Measuring just 30 x 27cm, the screens are remarkably unobtrusive and the text on them is visible only to the presenter.

With two screens, the presenter can look directly at different sections of the audience without losing the prompt.

Controlling the head up displays is an Amiga computer and a special computer program which took one of the world's leading Amiga programmers, Tony Horwood, two years to write and perfect.

Making full use of the Amiga's brilliant graphics capabilities, the program offers a multitude of very readable type faces, full colour and highlighting options, powerful word processing, last minute editing and silky smooth scrolling.

The scrolling can be controlled by either the presenter, or by an assistant. There is also the capability of controlling other audio visual devices from marked points in the text for even more emphasis.

The *Presenter 500* can also read text prepared on other Amiga word processors and, indeed, text files prepared on an MS-DOS (IBM compatible) machine. It will also save text changes back to the original MS-DOS disk.

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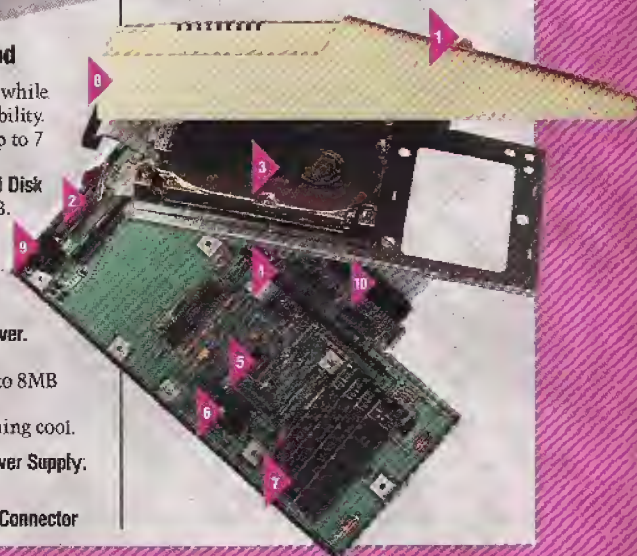
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Graphics and Video Update

the application, *Presenter 500* is extremely easy to use, requiring virtually no training. It is therefore, highly suitable for the organisation which has only occasional conferences and meetings.

Presenter 500 is available as a software package to run on the user's own Amiga computer, or as a complete portable system including the Amiga. The latter is battery powered and mounted in a tough carry case ready for transportation to the conference.

Various options are also available, from a simple single screen system to the ultimate facility with automatic adjustment of the reflector screens by computer.

For further information contact Mr. Jeremy Redgrove, Managing Director, *Presenter Promoters* (06) 257 1000, Fax (06) 257 4904.

Exhibition of Amiga Art

As part of the National Arts Week Seminar, Artspace held an exhibition in Sydney of almost twenty works; works by Australia's (and, in some cases, the world's) leading exponents of computer generated art. Titled "Visual Landscapes", the exhibition was held at the Artspace Visual Arts Centre in Randle Street, Surry Hills (Sydney).

Given the importance of the exhibition to the development of computer art in Australia, Commodore loaned the gallery Amiga computers on which many of the various art forms could be exhibited.

A wide variety of com-

puter generated art forms are possible; those at the exhibition (and they ranged through video, animation and dissolving frames through to "hard" artwork on bromide or paper) represented just a small part.

A significant number of the computer artists displaying at the exhibition used Amiga computers for their works, maintaining that the Amiga is simply the best computer available for computer art applications.

It was designed as a graphics oriented machine (many other computers have graphics "tacked on", almost as an after thought).

As a finale to the exhibition, which lasted for almost a month, a seminar was held at the Art Gallery of NSW entitled "Digital Dreams or Virtual Reality".

Three of the world's leading computer artists - Paul Brown of Melbourne, Sally Pryor of Sydney and Bill Seaman of the US - looked at the present and possible interaction between computers and people.

MediaPhile 2.0

Desktop video production with consumer video decks and camcorders has arrived with the introduction of complete edit control systems from \$320 by Interactive MicroSystems. The system works with any VHS, SVHS, 8mm, Hi-8mm or Beta video deck or camcorder that has infrared control.

MediaPhile systems control video decks from Commodore Amiga computers through infrared re-

mote control. Tape counter information is brought into the computer from Sony "remote" jacks, or from MediaPhile edit control kits that can be easily installed in just about any videodeck.

MediaPhile controllers also have SMPTE time code inputs and a remote-pause control output.

The MediaPhile system supports A/B-roll editing from two player decks to a recorder, insert editing, genlock and switcher control, and animation and title recording. Edit decision list script commands display title and animation graphics, control genlocks, switchers, and special effects devices and send infrared commands.

Mouse and keyboard deck control make editing easy. Select any deck function including freeze-frame, single-frame step, and digital effects from a screen control pad.

AREXX compatible programs like *AmigaVision* and *CanDo* control video decks, laser and compact disk players and other devices through MediaPhile controllers to give dramatic multimedia presentations. Linking libraries are available for control from C-language and BASIC programs.

The MediaPhile system can be purchased directly from Interactive MicroSystems, 9 Red Roof Lane, Salem, HN 03079 (603) 898 3545.

□

GRAPHICS PALETTE

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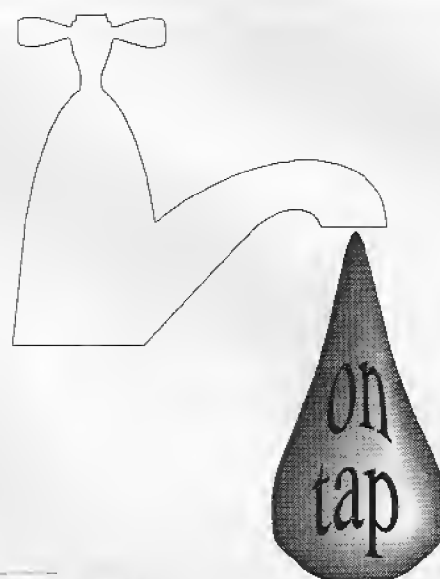
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Video Tools



Here's a handy collection of video utilities which could make your current array of public domain alternatives obsolete.

Peter J. Ward, our resident video expert reports.

► Fordray Manufacturing, the people who brought us the Neriki Genlock (the one I use in my editing suite) have come out with a 'toolbox' for video users. The pre-release (Beta) version of *Video Tools on Tap* (VTOT) supplied to *Professional Amiga User* came with 27 A4 pages of text describing the functions and installation of the "soon to be released" program. The manual as such was clear and concise, with packaging being the major change for the commercial release.

Video Tools on Tap requires 512K of RAM and version 1.2 or higher of Kickstart. The program may be run from the workbench or CLI and may even be included in your start-up sequence and run as a background task. VTOT also has an AREXX port. *Video Tools on Tap* is not copy protected and may be easily installed on a hard disk.

When summoned, it runs in the background and may be invoked by a 'hot key' combination, the default being left-shift, ALT and an action key. Hot key combinations can be customised by the user to avoid any conflict with other hot key actioned

programs. The program needs to be told whether it will be running in NTSC or PAL Amiga. This is easily achieved by placing either a 'NOSETUP' or 'SETUP' flag in the change parameter instructions for the program.

Features

An important part of *Video Tools on Tap* is the illegal colour detection facility. This needs to be loaded first. Once running in the background this facility will cause your Amiga to "beep" while an illegal colour is being displayed. To be frank, it is this feature which both rewarded and irritated me most.

A standard Workbench screen will make the colour detector go bananas. The incessant beeping thus invoked does not go away until you either fix the colours in the displayed screen (which I happen to like) or turn down the volume on your Amiga monitor (which I eventually tend to forget about). Perhaps the 'commercial release will play a catchy tune until you fix the displayed screen.

The reward is that when dumped to video tape, the displayed screen thus

'made legal' records with little or no bleeding when compared to the original.

A less audible version of the illegal colour detector supplied with VTOT is 'Fixer', a utility which can be used on any IFF image stored on disk. Fixer replaces any illegal colours with their nearest legal counterpart, and saves a new file with an appropriate 'F_filename' extension.

The remainder of the package could be described as being a comprehensive collection of IFF images and image processing functions. Several colour bar formats and test patterns can be instantly displayed by pressing the appropriate hot key combination. For example: pressing SHIFT, left ALT and 'C' together will cause your Amiga to generate a set of SMPTE colour bars.

The instructions do not attempt to hide the fact that your Amiga is not a studio test signal generator, and indeed point out the differences from the ideal and that generated by your Amiga. The purpose of all such screens when generated by an Amiga is to give you a consistent benchmark to assess the encoded quality of your

Amiga graphics.

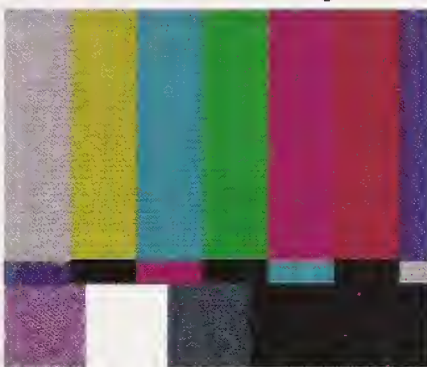
The list of hot key actions is impressive: black screen, SMPTE colour bars, EBU colour bars, full colour bars, grey scale and blue colour bars. *VTOT* can generate a standard convergence pattern, useful for adjusting the aspect ratio of monitors and RGB alignment. The currently displayed screen can be re-centred, overscanned, and interlaced. Image processing includes single bit plane, anti alias, blur image, clean pixels, edge detect and negative single-plane conversions on any screen.

HAM Mode

It is in the image processing area that *VTOT* (beta) has some problems. In any non-HAM mode all functions seem to work well, however invoking anti alias for example, on a HAM image will put your screen through an IFF shredder, with the end result being a scrambled screen bearing not even a vague resemblance to the original.

I also found that my A2500 would hang at random while running *VTOT* in the background and trying to invoke a hot key combination. In addition, after having invoked an image processing function, there is no interrupt to stop the process should you decide the effect is not what you wanted.

There can be other problems, though in this instance not strictly with *Video Tools on Tap*. The CLI utility *DiskMaster*, will not allow you to continue to display any IFF image after pressing any key on the keyboard, let alone any hot key combination, thus rendering useless



the image processing utilities of *VTOT* while using this package. It would thus be wise to obtain a non-keyboard interrupt IFF display program when running *Video Tools on Tap*.

Several screen effects are available. Simply pressing the hot-key combination and 'D' one can fade the displayed screen to black. Similarly a fade-up can be achieved by hot keys and 'U'.

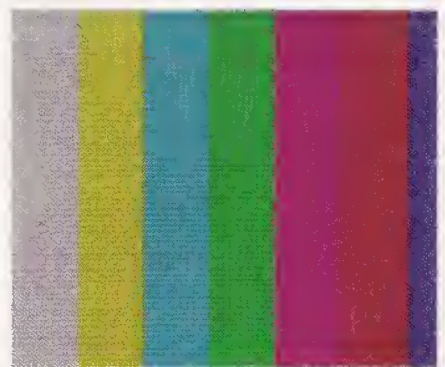
The speed of the fade in or out can be modified by assigning a fade speed value from zero to nine. Screens can also be flipped vertically and horizontally. The mouse pointer can be toggled on and off and any currently displayed screen can be saved as an IFF image in a user defined directory.

Apart from fixing colours, flipping screens and fading your Amiga to black, *VTOT* can also generate a standard 1kHz audio tone. To complete the ensemble a time code calculator and converter is available as a utility with *Video Tools on Tap*. The calculator is the same as that found with *Microillusions Edit Decision List Processor*, which is not suprising as Mike Berro wrote both programs.

Conclusion

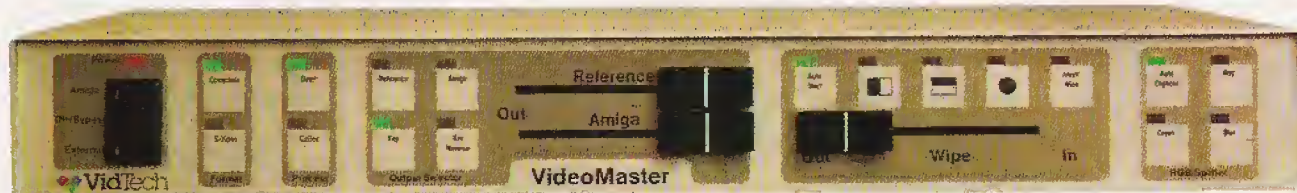
In summary *Video Tools on Tap* contains various utilities that by themselves would hardly raise an eyebrow with hardened Amiga videophiles. Indeed some of the functions are readily available in the public domain, however, by having so many useful utilities available within one package *Video Tools on Tap* promises to be the toolkit of choice for Amiga video applications.

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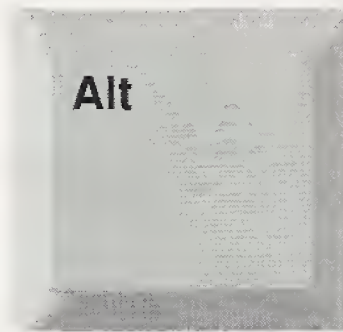


WARNING: Popular Australian-made Y/C (in/out) optioned genlocks using internal composite video processing are unsuitable for professional S-VHS, Hi8 Y/C component applications.

The Key to Contacts

By Andrew Farrell

If you work all day with your eyes chasing the familiar mouse pointer around Workbench, Contact is a natural partner to help reduce your desktop clutter - not only on your physical desk but on-screen too.



► I've tried nearly every address program released for the Amiga. From the early days of *Notepad*, to the more sophisticated *Gizmoz*, I progressed to eventually settle for *Professional Data Retrieve*.

It was easy to set up, generating reports was a cinch, and the database could be made to display as a small window on Workbench. However, it also had its problems.

Running an entire database program just to keep track of some 137 names and addresses is time and memory wasting. The program has had some annoying bugs.

However, none of the available pop-up or pull-down utilities offered a number of quick ways to locate a name. Some relied on crazy full record browse techniques, or one name at a time scroll windows.

Who, What, When and Where tempted me briefly as a replacement, however it lacks reliability and is incredibly clumsy in some areas. *Contact* is different. It's functional, solid, powerful and compact - filling around 50K of memory.

Like *Professional Data Retrieve*, *Contact* offers a slider which displays a

range of names in a selection window much like a standard file requester. In this way you can quickly zoom to and fro through your list and locate names. If you're really stuck, there's a very powerful find option which will locate any word or part of a word in your entries. This means you can search by any field with partial or complete matches.

Getting Started

To use *Contact*, you need to add one assign to your startup-sequence. Once *Contact* is run, preferably also from the startup-sequence, or from the Workbench, a small window appears to let you know how many addresses have been read into memory and which Hot-Key will activate the program.

The window then disappears and you're left with a clean Workbench. When you need an address, a simple key combination triggers *Contact* to appear on Workbench ready to select a name.

The default database includes a few useful contacts - unfortunately the number for this magazine is not one of them. You can add it in easily enough. However, if you're like me and already

maintaining some alternative list, then the problem of how to get the data into *Contact* arises.

There is no simple import option, but the excellent documentation includes information on the file format, which is a fairly standard arrangement of ASCII data.

With a little work, I had soon designed a FORM report from *Professional Data Retrieve* to output the database in the flat file format required by *Contact*.

A quick edit in *Transcript* and the file was ready to use. My 137 contacts were now safely in what I now consider a far more economical, more functional program. However, *Contact* is not just a bare list entry package, there is plenty more.

Output Options

Once you have your data in *Contact*, there are many ways to get it back out onto paper or into another package - be it a database, word processor or any text based program.

Contact fully supports the clipboard. It's a shame more programs don't share the same respect for this function. To use it you simply select the right address, choose CLIP and then switch to the application which has a clipboard based PASTE option.

All fields, not including phone numbers and field prefixed by an exclamation mark, are pasted into the document.

The same restraint on data export is true for the other export methods. For programs which don't play ball with clipboard, there's a TYPE option. This clever program trick makes use of the keyboard buffer to move the data into

place. However, it is limited in operation to pasting data in programs which open on Workbench with *Contact*.

Full hard copy output is catered for, with a variety of controls over formatting. These include Indent, Pitch, Lines per Label and Quality.

There is also support for Postscript output devices - as you can imagine, this won my immediate praise! Take note please all major designers of any half-decent program. Postscript is what much of the real business world uses out here - so please support it.

Print Matching provides control over selection of sub-groups for printing. These groups can be set-up using the comment field.

The last, perhaps most practical, use of *Contact* is to provide a real short-cut to having to dial the number in question. The two phone number fields provided each have a telephone keypad gadgets.

Clicking here will cause *Contact* to dial, using adjustable modem settings, the number you have on file. If you have a tone dialling phone as opposed to the old decatic "clickity-click" system, this is a genuine time saver.

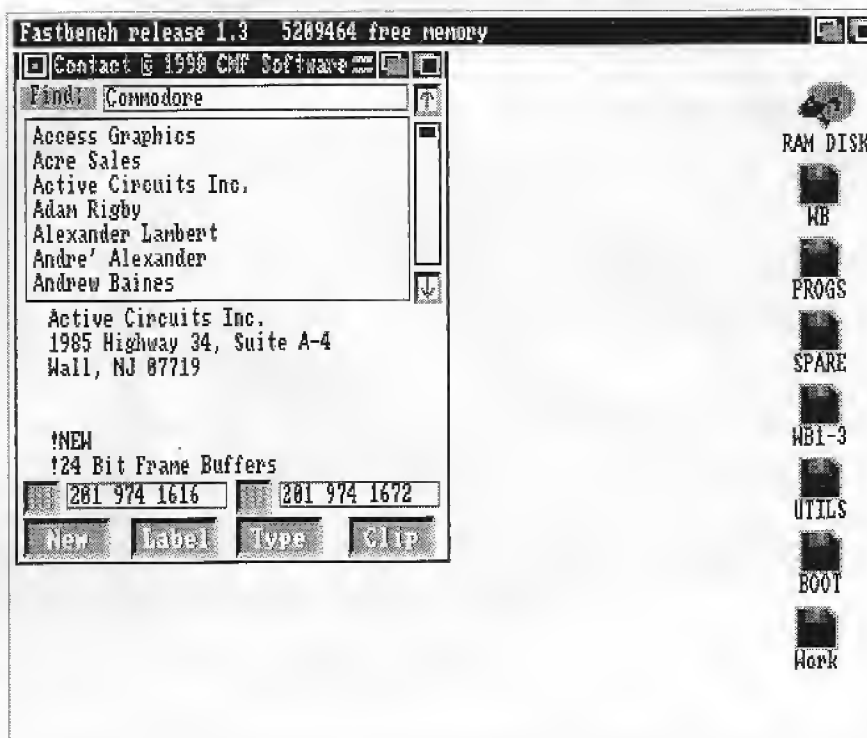
File Functions

As new contacts are added, *Contact* appends them to the data file. The new entry must be SORTed into order before it appears correctly positioned. This should be automatic. Sorting does take place every time you LOAD the contact list.

Each entry is sorted by default according to the first entry - usually a company name or surname. A sort marker may be used to force the sort to take place on another field.

Another larger annoyance is the necessity to SAVE the list after edits or additions. During a day I may make dozens of changes to numbers, add comments about people and what they're doing.

If my machine GURU's, all is lost. Not good enough. Auto-saving should be mandatory. Please add this feature.



A number of options for *Contact* can be set from the .INFO file using TOOLTYPES or from the command line with extensions. Just about everything can be altered or given a preferential setting.

There are short-cut keys to most functions. AREXX support is provided. The documentation is excellent and operation flawless. Overall, *Contact* appears to be a fine product - and locally produced too.

Suggestions

MS-DOS based 'contact' type products offer many more features to help track contacts. These include last called dates, auto-reminders, powerful search and report options for mailing to sub-groups and excellent interfacing with other products.

No doubt, *Contact* has room for some of these options. Obviously it was never intended to replace database products. However, the scope exists to take this idea much further.

Some of these operations could be performed from AREXX. This is beyond the scope of many users - and

Workbench 2.0 with AREXX included is still months away. Auto-saving is a must.

The record editing could be improved marginally by adding the ability to move up and down through the field using the cursor keys, and support for mouse high-lighting text to be deleted, or cut and paste.

At the moment, progressing to the next field requires you to press the return key. There is no way to double back without reverting to pointing and clicking the mouse. Single record browsing would be handy too, just for general housekeeping and tidying up entries.

Otherwise, a well designed and produced application - the best of its kind without a doubt. Perhaps a diary program with calender and Nag type facilities would integrate nicely? More of the same please.

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Australia

On the road to Professional Video Production

George Kimpton, one of our regular contributors, is a serious user of many Amiga products. All too well aware of what the Amiga was capable of, George dived in at the deep end to produce an entire one hour video. A newcomer to the production process, here's his first hand report on what was learned in ten days effort.

➤ Have you ever felt the urge to make a video yourself?

Have you ever sat down and thought about how you would do it? Well there is nothing like reality to bring one down to earth in a hurry, as I found out recently. Some months earlier I had off handedly suggested to my then employer that I produce a staff training video on Pipe Locating based on lectures I had given in the past. I felt sure it would be a piece of cake.

The phone rang three months ago, and after some negotiations about production schedules and fees, the deal was closed. I felt pretty pleased with myself but then the enormity of the task sunk in.

Sure I had my trusty Amiga 2500 with its video magic but there was to be much more than that to making a one hour film with live people in it.

VHS, S-VHS, Hi-8 and Beta formats, Video cameras, video recorders, editing suites, mixers and genlocks suddenly became things about which I found I didn't know a lot. I also had to learn to make them work together smoothly or my name would be mud.

This then is the story of my trials and tribulations. It is told in the hope that you, when tempted, will be able to avoid the problems and pitfalls I experienced.

Pre-Production

At this point, in spite of some minor misgivings, I was still pretty confident. I was sure there was no need for a script or storyboard. I had given this lecture often enough to know it like the back of my hand. It would simply be a matter of filming me giving the lecture then replacing pics of me with field footage, or so I thought.

Live on camera and in the best traditions of "It Will Be Alright On the Night" I fumbled, fluffed my lines and just plain froze. I couldn't remember what to say even though I had said it often enough before. Well I got plenty of film of me with egg on my face and that was about all.

In addition every place we went to film the "talking head" segment seemed to be full of unexpected, unpredictable and annoying noise at the wrong times. Also what appeared innocuous backgrounds suddenly became hopeless. It was a disaster. Day one wasted. Time for a rethink.

I had discovered a number of valuable facts. Now to learn by them. The experts did know something after all.

Scripts and Planning

I did need a script and a quiet room for voice recording. I also found that not all microphones are good. The

one with the camera was terrible and was replaced with a cheap Tandy lapel mike. Hand held mikes pick up all sorts of noise including clothes moving when you breathe.

I found I needed a shooting plan so that it was not necessary to be reeling back and forth on the video tape to find the right shots.

It was at this point that I also found the truth of the old adage "you only get what you pay for". Dropouts became a disaster with normal 'over the counter' video tapes. Don't try to be a cheapskate if you want quality.

Next problem, how do you read a script without it being obvious that you are? How do you look natural and comfortable? How do you look as though you know what you are talking about?

The first efforts were terrible. I was obviously looking somewhere other than the camera when I tried to read the idiot board. We moved the script in closer to the camera but my glasses reflected the sheets of paper, particularly when the sheets were turned. Very distracting.

Amiga to the rescue. I had written the script on *Scribble* and it was a simple matter to transfer it to *Prowrite*, change the font and size so that it could be read at a distance and

we were in business.

By extending the distance between me and the camera it now appeared I was looking into the camera when the enlarged text was held alongside it.

Next, using *Scribble* I went back over the text of the lecture and inserted notes about preferred external camera shots to illustrate what was being said. I also inserted notes about possible animations. This became my storyboard or editing script.

This editing script allowed me to mark on the "talking head" script where I needed breaks and how long for film or animation inserts. This then enabled us to complete the voice recording in two sessions.

One thing to remember here is the need to try and keep your head in the same position during filming to allow splicing when you muff your lines. If you show long periods of talking head from varying angles it doesn't matter so much. However if your appearances are relatively short a retake to cover muffed lines can cause a jump of the image at the splice.

It is a good idea to change the camera angle for retakes to cover the editing changes. These splices for retakes are a continual headache because your head is seldom at exactly the same angle for continuity. Expressions also vary between takes.

Animations

Since I was only working one day a week with the cameraman I turned my attention to the animations in between shooting. From the editing script I knew what I wanted.

I had been putting off trying animations in *Deluxe Paint III* so I decided to take the plunge since the budget couldn't afford an artist. After 22 animations which chewed up 3.2 Meg of hard disk memory I have only one thing to say, it couldn't have been easier or quicker even for a novice. The results are terrific.

Admittedly I have 68020 accelerator board with two Meg of 32 bit memory and an extra two Meg of RAM with a Fat Agnus installed in my 2500 to make things easier. This arrangement sure makes those animations move.

I used *DPaint* to produce outline drawings for brushes and backgrounds which were then transported into the animations as needed and set in motion with the MOVE requester. To save a lot of work the complete background, including text, should be organised before setting up the frame requester. Stationary text and pics are always inserted into the layout before setting the frame requester otherwise you can get into some tangles copying to other frames.

It is also a good idea to check your chosen palette on a normal PAL receiver before going too far as what may appear a good palette on your monitor may be shocking in real life. Steer clear of highly saturated colours, they bleed when genlocked (See 'Keeping it Legal' in Oct/Nov Professional Amiga User.)

Variations between palettes can cause some startling effects during editing of the video tapes with the genlock.

I was also glad that I chose to use Hi-Res with *DPaint* and limited myself to an eight colour palette as this speeded up things and gave good looking pics. I found it was possible to produce fairly complex animations quickly and easily. It is even possible to animate movements in the perspective mode through the MOVE requester. In some I managed to have four things happening at the one time.

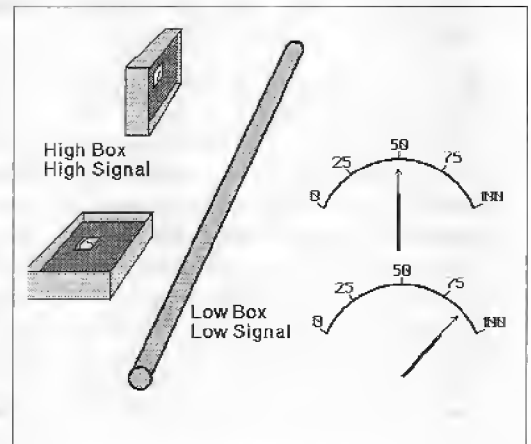
This was achieved by setting up each movement on the MOVE requester and plotting and saving it. Then resetting to frame one I would overlay the second animation and save again. Each previous save in effect became the background of the new animation and so on.

Timing was achieved by stepping through the saved frames and noting key frames in the first part. These were then used in setting up the MOVE plots over the right group of frames in the next part of the animation. Another thing I found, with rotating straight edges (such as a meter needle) in

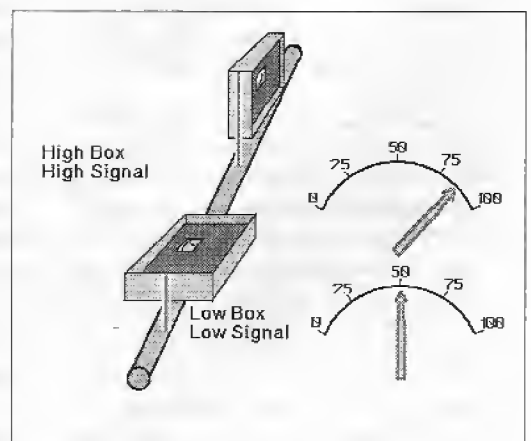
MOVE always try and start in the vertical or horizontal planes where possible to avoid distorted edges during rotation.

Original edges must be clean and sharp or some funny little bits start to appear during rotation spoiling the desired effect. Colour cycling was used for some single picture animations where movement was only suggested such as showing movement along a path. This can be very effective with carefully chosen colour spreads and cycling speeds.

With the completion of the animations they were transferred to floppies for transport to the editing studio. Here again the word processor was used to produce a list of animations



Deluxe Paint III Animation
Frame 1



Deluxe Paint III Animation
Frame 15

and which disk they were on. It also included a brief description of the animation itself.

Titles

Next came the titles and lead in. We needed something jazzy to attract the attention. I decided to use *Video Effects 3D*, a special effects generator, plus IFF pics produced with *DPaint* and text screens saved from *Pro Video Plus* as IFF pics.

Again, check co-ordination of palette colours between programs if you don't want some unexpected effects. It is also very important to be careful which black you use to outline text or objects. If you use colour 0 as black as it is in many palettes when you genlock the outline is suddenly transparent.

In my opinion *Video Effects* is one of the best effects generators. It will allow multiple motions to occur simultaneously, quickly and smoothly. The only problem is it can be fussy about memory and did take some hours to produce the titles on a standard 2000. It wouldn't go near my 2500 at all.

Taking the client's logo, which was traced using an "Easyl" pad in *DPaint*, and overlaying the name, from *Pro Video Plus* (Hi-res Fonts), into the *Video Effects* editing screen the motions were mapped.

Now over a period of five seconds the logo plus name, emerging infinitely small from the upper right corner, zoomed tumbling twice and enlarging until it almost filled the centre of the screen where it held for 1.5 seconds.

While the logo held, the lecture title zoomed forward from behind the logo in centre screen to eventually replace the logo and name centre screen. If I had wished I could have used *Video Effects* extrusion facility to make the words and logo solid and also thrown a following shadow.

Using *Pro Video* with its High-res fonts, shadows and edging facilities allows you to produce some really great text screens for saving as IFF pics. These can be used with the gen-



George Kimpton, at work in the edit suite

lock for all sorts of things even backgrounds for animations.

Credits

When it came to the credits *Pro Video Plus* won hands down with its Hi-res fonts, its many transitions and its ability to pre-program the progression of the credit screens. These were all saved in the finished format for use with the genlock later during final editing.

One word of warning, lines of text that roll either up or down the screen can tend to jump from scan line to scan line on the monitor unless the speed is carefully chosen to minimise this effect.

One thing to consider carefully is whether your credits will be seen over a matt single colour background screen or scenery. The colours in the background can, if badly selected, totally spoil the effect and readability of the credits.

It isn't always necessary to employ professional actors. You would be surprised just how many good amateurs are out there waiting to be discovered. In this case I was limited to using regular Pipe Locator Operators because they had to look like they knew what they were doing.

We faced the problem of finding the right location and backgrounds for the action. It is amazing how the general public can come from nowhere ci-

ther on foot or in vehicles and get in the way. Next there are the props, those things that you take for granted but are very important particularly when they are the centre of attention. Some are dirty or damaged. Some are in bad filming locations in poor light or just plain hard to get at. When you get there some are the wrong model or colour and so it goes on.

Finally after sorting all these problems out you are confronted with bad weather. Can you film indoors? Is the lighting good enough? Close ups of instruments were filmed inside using photoflood lamps choosing the filming angle carefully for the right effect and to avoid glare from the lights.

Next was the choice of camera. VHS or S-VHS? Video 8 wasn't considered because I did not have access to editing facilities even though I had seen some impressive film. Ideally S-VHS would have been the format because third generation copies are as good as originals in VHS. This would have allowed two levels of editing if necessary and still produced a good quality video. Unfortunately the editing suite was VHS only.

Finally we settled on a Sony DXCM3 camera for inside work and a Panasonic AG-450 camera which is capable of S-VHS quality recording but was used in the VHS mode for outside filming. Both are relatively heavy cameras which sometimes need a tripod for stability particularly for telephoto zoom shots.

Good lenses and good lighting are very important. A cameraman who knows his camera is also very important because backlighting and angle of shooting can make or break the effectiveness of your video. Nothing is worse than trying to describe details that cannot be seen on screen and let's face it the cameraman is the only one that can see what is being filmed until you are actually editing the tapes.

It is vitally important that your cameraman knows exactly what you want from him. Shooting scripts must be detailed enough for everybody to know what is required of them.

At worst, most cameras have playback facilities in black and white and you can check there and then whether you have the shot you want in the can. Try to film sequences in the order they will be used. It saves a lot of backing and filling when editing and less wear and tear on gear and nerves.

When we finally completed the field work we sat down at the editing suite and worked our way through the tapes and shooting script making notes of any changes. We also noted the exact location and timing of each segment as it ran through the playback recorder for speed of access and use during later editing.

Editing Suite

The editing suite consisted of two VHS Panasonic type AG6500 professional recorders, a National Editing Controller type AG650, a Panasonic Digital Production Mixer type WJ-MX10 which allows video and audio superimposing and mixing through wipes and fades and also provides a matt colour background for Genlock.

Added to this were two JVC type TM90PSN RGB Monitors for viewing and an Amiga 2000 Computer with 3 Meg of memory and a Thompson Monitor combined with a Neriki Image Master Genlock for Video insertion of titling and Animations.

With every thing ready we settled down to putting it all together. Using the Amiga and the Neriki Genlock as our alternative video source we proceeded to lay down the master tape which would be used to produce working copies of the lecture.

First came the Titles and lead in. With *Video Effects 3D* creanked up, we used a dark matt background from the Production Mixer we hit the GO button on the Amiga.

Fantastic on the Amiga monitor but nothing on the tape monitor. A mad search of the multitude of switches and faders on the gear and the light dawned. Wrong source selected. Change the switch and away we go again this time successfully.

You have two choices in this type of situation. You either pay someone who knows how to operate the gear or

you sit down and spend some time experimenting and making sure you know how it works before you start.

Either way is expensive unless you already own the editing equipment. Luckily in this case the client was supplying the actors, cameraman, editing gear and the operator for editing. All I thought I had to do was to tell him what to do. The only trouble was he was new to all this and it became a co-operative effort. We learned together.

Next problem was the background music. Being wary of infringing copyrights we looked around for some suitable music. Amiga to the rescue again. After sorting out the means of taking sound from the Amiga we chose some demo public domain music and added it to the video track. There is a great range of music out there on demo disks ideal for titles and credits, it's just a matter of finding it.

Often during the editing I missed my hard disk to store the titles, credits, pictures and animations for quick access. I am convinced it is a must for the serious operator.

Using the talking head footage as our main working tape we laid down voice and sync a section at a time. Usually about five minutes a segment.

Next using the editing equipment we overlaid this with the field video, still pictures and animations using the Neriki Genlock. Apart from colour problems mentioned earlier the editing went smoothly using the editing script as our guide.

Finally with the master tape put together we sat down and went through it with a fine tooth comb looking for glitches. One of the first things that became obvious was that on some inserts when setting the start and finish frames we had not given enough overlap. This resulted in a bad transition sometimes with one spurious frame between the old and the new.

To avoid the problem it is necessary to set the insert start at least one frame early and the finish at least one frame late on the existing video.

For stability is also very necessary to apply an external sync usually from

either a TV station or a blanked video camera. This sync is used to lock the whole system together.

There is also a correct order for switching on the gear. Sync source first followed by the editing gear then the Genlock and finally the Amiga. This ensures that everything runs in synch with the video signal.

One point to note here, when running in genlock, the Amiga programs may run OK and load or save but some things do not like the speed change. For instance, you cannot format a disk.

Apart from the insert jumps, which were easily fixed, the tape looked pretty good and just needed some tidying up.

With additional inserts to hide my ugly face (client's remark) and a little more padding to make points clearer, the tape was finished except for the credits at the end.

The credits were done using *Pro Video Plus* using an upward roll transition over a matt colour background and using the production mixer to provide a matt colour background and final fade out. The original music was used as a background to the credits fading out with them.

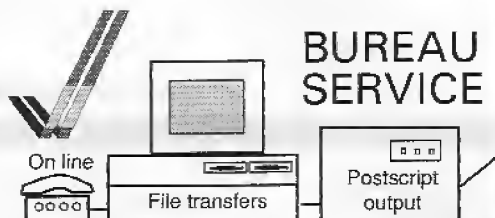
Finally the master tape was then sent off to a professional video house for copying. They have far better facilities to produce higher quality copies than you can ever hope to make.

The client thought the *DPaint* animations were great and they really got the message across. I had a satisfied customer and strangely enough I had guessed correctly that it would take ten working days to produce a one hour tape. Not bad for a beginner.

One interesting point, the original lectures took two days to get across the same information

I may be biased but it looked pretty good for a first time and I certainly hope there will be more in the future. Seeing your first production on screen certainly gives you a high and a very strong wish to go on to bigger and better things.

□



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| | | |
|--------------|--|---------------------|
| AMIGA: | Advantage | Art Department |
| | ASCII | Colour separations |
| | DeluxePaint III | DigiPaint/Digiview |
| | Excellence!# | KindWords |
| | Maxiplan | PageStream# |
| | PageSetter 1.2 & 2# | PostScript |
| | Professional Draw# | Professional Page# |
| | Scribble | Sculpt 4D |
| | Superbase | TextCraft & TC+ |
| | Turbo Silver | WordPerfect# etc... |
| IBMs/clones: | ASCII, Lotus Freelance Plus, PostScript, Word#, WordPerfect 4.2#, WP Conversions | |
| MAC: | ASCII, Excel#, PostScript, Word#, Works# | |
| ATARI ST: | ASCII, Postscript, WordPerfect# | |
| C-64: | Seq / ASCII | |

Has PostScript support; use outline fonts eg Times/CGTimes/PTimes.

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Shopping for BASICS

by Perrie Iles

BASIC offers those with reasonable programming talents the opportunity to develop their own custom solutions. The results can be compiled to run at a very acceptable speed. But which BASIC should you use?

► Every Amiga comes with a copy of AmigaBASIC. Compared to other BASICs developed at the same time, it was very fast, however it is now very slow, clumsy and somewhat dated. If one only does the occasional touch of programming then there's absolutely no reason to buy any other language.

For those who wish to write programs there are a plethora of language systems available. These include BASIC, Fortran, APL, C, Logo, Modula-2, Forth. For specific applications you may be forced to use a particular language, such as Fortran for scientific use, Modula-2 for University work or Cobol for business use.

For those who cringe at the thought of C and don't have hours to setup an assembler program, then BASIC is the go. Until recently BASIC suffered from very poor public relations.

It was thought of as a real toothless language. I must say that this is now unequivocally false. Modern BASICs offer a well structured, integrated and user friendly environment.

Furthermore, compiled BASICs offer relatively high speed and reasonable code size. The ultimate of these BASICs is not available on the Amiga, but on

MS-DOS machines - QuickBASIC V7.0 offers capabilities unheard of in Amiga BASICs.

However some attributes the Amiga versions boast cannot be compared, such as the ability to produce optimised code for the various 680X0 processors and the 68881/2 co-processors, or the Amiga's custom chips which unfortunately are not adequately supported in any of the reviewed BASICs at all, particularly the Blitter.

The MS-DOS range does not have any compilers offering multiprocessor optimisation capabilities, most have only single processor capability, some have dual processor such as 8086/80486 although some "re-assemblers" can convert 8088/8086 code to 80X86 code - at quite a hefty price though.

Motorola's CPUs offer a much higher degree of compatibility as far as applications programs are concerned (very nearly 100%).

Applications optimised for any Motorola CPU require little change to produce their best on any of the family. This means little time or cost to produce such an optimisation capability on any Amiga language (Lattice 5.10 offers a complete optimisation capability 68000 to 68030 and 68881/2).

Comparisons

In this review I will be comparing AmigaBASIC, GFA BASIC V3.5, F-BASIC V3.0 and HISOFT BASIC V1.05. Some other programming languages claim to be BASIC (BASIC is an acronym for BEGINNERS ALL PURPOSE SYMBOLIC INSTRUCTION CODE) but offer a more limited subset of what most BASICs offer. The two I refer to are *Blitz Basic* and *Amos*.

Correctly they are specialist languages (I call them VIPERs or Video Programming Environments).

Blitz is the first to offer true high level control over the Blitter - something I wish the others would offer, as well as more comprehensive use of the other custom chips. These languages provide very specific advantages over other languages which should be considered by the specialist programmer.

AmigaBASIC includes a glossy colour manual which assumes very little, an excellent guide for beginners with little or no idea of how to program in BASIC. For someone with no programming experience this offers a very good step off point for the more powerful BASICs available.

GFA-BASIC has a well produced manual with good indexes. It includes complete examples and has the full Amiga Library indexed with usage. Ways to optimise the program when using the compiler are covered.

The indexes seem a little incomplete and the manual is incredibly bulky at over 400 pages. A condensed version for day to day use would be great. There is no direct support for the Blitter from a high level.

F-BASIC, a somewhat simpler manual NOT designed for the neophyte (again a learner's manual would be an advantage), good indexes (with occasional wrong pages indexed). Includes a group of pages ideal for that quick guide to functions (excellent for by the computer use).

The F-BASIC manual misses out on some high level functions, such as Half-brite, Ham, Overscan and Super-bitmap screens, although these can be accessed via low level routines, something that

should be corrected.

HISOFT BASIC, a fairly good manual covering BASIC programming quite well.

Since it is pretty well AmigaBASIC compatible the combination of the AmigaBASIC and HiSoft manuals cover most aspects quite well for beginners and advanced users. A page indicating enhanced AmigaBASIC commands should be included. An "Extend" package for the language adds more flexibility to the package.

AmigaBASIC contains no reference to Amiga libraries, little detail on including C programs, no access to Blitter at high level and no library data.

QUICKBASIC V7.0, the ultimate "by the computer" manual, an instantly and fully indexed and detailed 'on-line' manual, why with the Amiga's multitasking does it not have this 'on-line' function?

It should even be able to link the detected errors up to the appropriate command template and show you the appropriate information, instead of some semi-heiroyphic error statement (or even a two or three word error statement, which you then have to refer back to the manual).

The Operating Environments

AmigaBASIC provides a fairly convenient integrated (interpreter) environment with options available from menus. Very slow, auto-capitalisation being one of its few redeeming features.

At the time it was one of the few BASICs to offer labels and freedom from line numbers. It shows as a very dated product now. However the price is still right, for a machine with a huge 512K of RAM it had an absurd 25K limit.

GFA-BASIC provides an integrated interpreter/compiler environment, but still provides the ability to use a word-processor or other editor (but without the GFA-BASIC editors' built-in functions) to produce source code. The compiler is just a key press away.

The editor is only marginally faster in letter by letter movements than AmigaBASIC. It has many excellent features (such as page up/down controls). Common functions are continuously displayed in two narrow bars across the screen top.

The interpreter/compiler environment inspires confidence. It enables one to produce and check programs instantly (with the interpreter) and when debugged compiles easily (just like QB-7.0), and includes niceties such as auto indent and auto capitalisation.

One feature I like is the procedural folds, this really makes large programs an absolute cinch to write - it should be standard on all languages.

What it does is close a procedure so only the name appears, pressing one key unfolds the procedure so it can be seen.

F-BASIC, is a compiler only package. It includes an integrated editor, FeD - this enables easy compilation - however GFA offers more information on addresses of source, object, libraries, linker etc (not that I could get this feature to work correctly in GFA).

The editor is quite fast, and can incorporate a source level debugger. If this had an interpreter in the package it would be only a step or two behind QuickBASIC. Only accepts keywords in upper case.

The source level debugger integrates into the F-BASIC environment too. F-BASIC is a real power user's BASIC. Sometimes a bit puzzling, offering speed and flexibility.

Not for the total novice, but for anyone with some BASIC experience it is extremely powerful and offers heaps for the experienced user.

It also includes commands to load and play pictures and sounds (IFF) in line F code for 020/881 (note that this is not the same as optimisation for the 020/881 combination), user defined records and record manipulation functions, complex numbers and mathematical functions and plenty more.

Takes a little bit of getting used to, (after AmigaBASIC) but provides more

in its rich command structure (which in many ways is EASIER to use than the others) apart from a couple of oversights mentioned (some types of screen setups). It has the provision for incorporating your own (or anyone else) library of functions - including the likes of EXTEND.

HISOFT BASIC, (with AmigaBASIC), provides a good platform for learning the language and all the advantages of the interpreter/compiler environment - not quite so seamless however as GFA.

Offers AmigaBASIC to produce the interpreted code and then compiles the detokenised ASCII source file. With EXTEND it offers the chance to improve on the original - and allow those of us with old AmigaBASIC code to get some real speed.

Now we've looked at the SHELL, we need to review the areas for which we buy a compiler - SPEED.

Mathematics

Mathematical speed is a compromise between three parameters, although most seem to only recognise two. These are speed, accuracy and format compatibility.

Most support two BASIC types of numeric variables, integer and floating point. Integer variables can consist of one, two, four or eight bytes (some even 16 bytes).

Since the 68000 has an inherent 16 bit format it works fastest in two byte variables (this would probably not be true of a 32 bit machine such as the Amiga 3000).

In most cases any integer functions would be faster than floating point (because the processor can only handle integer maths internally, except for the 68040).

Floating point, these generally occur in two formats single or double precision (although V3 of F-BASIC includes "complex" variables - a boon to scientific, engineering and mathematical users). If one neglects the use of a maths coprocessor then single precision is

| Task | AmigaBA | F-BASIC | Hisoft | GFA-BA |
|----------------------|---------|---------|--------|--------|
| create file (floppy) | 16.9 | 22.4 | 12.1 | 105.8 |
| create file (A-590) | 8.1 | 7.0 | 4.1 | 22.6 |
| create file (ram) | 7.9 | 4.7 | 2.3 | 18.1 |
| read file (floppy) | 15.3 | 13.8 | 8.8 | 16.9 |
| read file (A-590) | 12.9 | 7.1 | 5.0 | 10.8 |
| read file (ram) | 7.5 | 6.4 | 4.6 | 10.6 |

figure 1.

faster than double precision.

Most packages stick to IEEE or FFP standards, although C and some others allow you to choose which you prefer. Most offer either four or eight byte precision types.

AmigaBASIC offers single or double precision, about seven and 14 digits of precision, GFA BASIC offers only an intermediate precision of about 13 digits (compatibility with maths coprocessors seems doubtful).

F-BASIC offers an ultra fast nine digit single precision and uses the Amiga double precision libraries allowing it to use maths coprocessors if installed (V3.0 allows direct use of these making it even faster still because it calls the coprocessor directly instead of via the operating system, however it still doesn't optimise 68881 by using the internal registers to any great advantage).

These two modes cannot be used in the same program, however for a standard Amiga nine digits is almost always enough, with a 68881 installed double precision is always faster than single precision. When testing mathematical abilities two aspects need to be consid-

ered, speed and accuracy.

One standard test of this is the SAVAGE benchmark. This benchmark loops 2500 (or sometimes 25,000) times and it executes log, antilog, tan, arctan, square & square

root functions, only F-

BASIC provides a separate optimised square root function. Times and results are as follows, some other values are thrown in for comparison (figure 2.)

PRINT INPUT

The timings and accuracies show the compromises that must be made in a computer language. Where absolute speed is essential nothing can beat assembler and a 68881 (apart from a Cray). Those who use compiled BASIC must accept the limitations of the language (which are no worse than most others).

I feel the lack of double precision, and therefore 68881 compatibility, is a serious drawback especially as single precision offers a five time speed advantage over GFA.

On the other side of the coin, F-BASIC offers 300 times the accuracy for only twice the speed penalty. Another factor is the probable inability to use GFA with 68020,030 or 040 processors

and obtain maximum benefit (untested due to lack of time).

I have run AmigaBASIC and F-BASIC with an '020/881 combination with no problems (just much faster results - equivalent to an A-2500). In mathematical abilities I'd have to rate F-BASIC first, HiSoft second and GFA-BASIC third - any guesses for AmigaBASIC?

File & String Handling

Many operations involve screen, floppy/hard-drive, RAM and screen saving and retrieval, so how do these areas compare? To test this area we'll create a 56,000 byte ASCII file on floppy, A-590 and RAM to check read/write times by simply reading the file in and then copying it to the appropriate device (figure 1.)

The above results are to be blunt, a bit weird and not totally expected! I strongly suspect a combination of buffer size and read/write times are producing these weird results.

Video Speed

For simulators and games, video must be as fast as possible. It's not as easy to quantify speed in this area. Any ideas on benchmarks for this area would be gratefully accepted (figure 3.)

This test shows a 3:1 speed range, with GFA & F-BASIC's very close and well ahead of the rest of the pack, strangely with small strings HISOFT slows very dramatically.

Loops are an important part of every program, scientific, games, everything. As such they offer a degree of relative

| Language | Accuracy | Time | Result |
|-------------------|----------|-------|----------------------|
| Cray II (Fortran) | double | 0.1s | 2499.999 999 999 999 |
| AmigaBASIC | single | 34s | 99954 |
| AmigaBASIC | double | 73s | 2769.9 |
| F-BASIC | single | 3.9s | 2499.999 999 44 |
| F-BASIC | double | 49.1s | 2505.7 |
| F-BASIC A2500 | double | 0.7s | 2499.999 999 44 |
| GFA BASIC | real | 20.3s | 2499.999 999 44 |
| HISOFT | single | 8.9s | 2499.999 98 |
| HISOFT | double | 49.7s | 2499.53 |
| assembler (68881) | double | .04s | 2499.999 999 31 |

figure 2.

| | AmigaBA | F-BASIC | Hisoft | GFA-BA |
|-----------------|---------|---------|--------|--------|
| 1 character x | 81.6s | 27.6 | 79.9 | 35.0 |
| 1000 | 41.4s | 14.0 | 39.8 | 17.5 |
| 2 characters x | 21.0s | 7.2 | 18.9 | 8.7 |
| 500 | 17.0s | 5.8 | 14.8 | 6.9 |
| 4 characters x | 9.0s | 3.2 | 6.5 | 3.8 |
| 250 | 4.9s | 1.7 | 2.3 | 1.8 |
| 5 characters x | 4.2s | 1.3 | 2.3 | 1.5 |
| 200 | 2.8s | 0.9 | 1.7 | 0.9 |
| 10 characters x | 2.5s | 0.7 | 1.2 | 0.8 |

figure 3.

| | AmigaBA | F-BASIC | HiSoft | GFA-BA |
|------------------|-------------|-------------|--------------|-----------|
| Int loop 1 byte | n/a | n/a | n/a | ?,?,6.4 |
| Int loop 2 byte | 187,189,204 | n/a | 706,71,1,723 | 32,12,6.4 |
| Int loop 4 byte | 196,197,204 | 2.8,2.9,3.1 | 87287389 | 17,17,18 |
| Read loop 4 byte | 395,396,416 | 34,38,41 | 120,121,122 | 86,88,88 |

figure 4.

performance in speed of programs, times are in microseconds per loop. (figure 4.)

The three numbers refer to single, double and triple nested loops.

And last but not least, a real program. *Airy* calculates the diffraction pattern for a telescope.

| | | |
|------------|-----|-----|
| AMIGABASIC | 32h | 40m |
| F-BASIC | 2h | 21m |
| HISOFT | 5h | 0m |
| GFA BASIC | 3h | 45m |

Compilation speed, this factor seemed not particularly critical, all three are very fast. Typically a compilation on its own would take up to 20 seconds, no time for getting a cuppa here. Approximate speeds (lines per minute) are GFA 4,000, F 3,500, HiSoft 2,500.

Tests were run on an A500 running a standard speed 68000 and A590 + tow meg RAM and a one meg Agnus (anyone know how to use the four meg chips

to make the revision six boards into a two meg "super-obese" Agnus ??)

Conclusions

So which BASIC is best? Well that depends. If I were to go

out and buy a different BASIC to AmigaBASIC, without any hesitation I would have to recommend F-BASIC.

It is not perfect (no program is), however the power and flexibility of F-BASIC render it a very large way ahead of the pack.

If I had a large number of AmigaBASIC programs, I would recommend HISOFT on that ground, but on no others. Keep in mind the functions of EXTEND can be added to F-BASIC very easily, along with any other library you care to make.

GFA-BASIC is an extremely well polished product with few rough edges, its strange precision for reals and middling speed place it in a relatively poor position. F-BASIC should take note of the Compiler screen layout and the like - and why not have sliders for the screen colours like any self-respecting program.

F-BASIC's switch for 020/030/040 and 881/2 makes it the ideal choice for

those with TURBO boards or an A2500/A3000 (or even the A4000). Prices of the packages are (approximately) F-BASIC \$US99.95 about \$A140 landed here (direct from Delphi Noetic P.O. Box 7722, Rapid City, SD 57709-7722,USA) GFA BASIC \$A140, HiSoft BASIC \$A160.

I did not have the chance to compare AC-BASIC or TRUE BASIC, but it seems unlikely that these would change the situation markedly. However I am willing to be corrected. A HAM drawing demo showed the following times (the only relative times I have for AC-BASIC 1.3)

| | |
|--------------|------|
| F-BASIC 3.0 | 39s |
| AC-BASIC 1.3 | 110s |
| AmigaBASIC | 330s |

Only one further thing would improve the performance of F-BASIC and that is a combination of MACRO-68 and RESOURCE-030.

I would specifically like to thank David Pockett and Angus and Robertson, Hobart for allowing me to review these products.

□

PCM COMPUTERS

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|-------------|--|--------|
| VDriveH70 | 70 Meg A500 Hard Disk Drive - 28 mS NEC mechanism 64 K RAM buffer/FFS. Formatted. Installed, ready to run Very fast non-autoboot, external power. 12 mths warranty | \$1250 |
| 1.2h1.3 | Mod to Install Kickstart 1.2 and 1.3 in A500's/A2000's | \$60 |
| 1 Mb | Convert your A500 to access 1 Mb Chip RAM REV 6 A500 | \$30 |
| ChipRAM | Switchable 0.6M/1Mb REV 5 A500 | \$110 |
| 256 x 1 RAM | RAM chips 41258 256 K x 1 150mS - min qty 16 each | \$220 |
| GVP RANGE | PCM supplies the full range of GVP products including all hard drive systems, tape drives and accelerator boards. | |

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| Amiga 500 | A500 Starter Kit with 1 MB RAM ChipRAM/FastRAM switchable. Full warranty | \$995 |
| A500 | Monitor stand - all steel | \$ 40 |
| EPSON | LQ-400 10" 24 pin 360 dpi hi-res 180 cps printer | \$530 |
| EPSON | LQ-550 10" 24 pin 360 dpi hi-res 180 cps printer with push tractor/paper park/semi-auto load | \$620 |
| DISKS | 3.5" DSDD box of 10 | \$ 12 |
| | 5.25 DSDD pack of 10 | \$ 5 |
| PD Disks | Public Domain Software - per copy (excl disk) ea over 600 disks to choose from | \$ 2 |

| | |
|--|-------|
| VDrive5.25 5.25" Ext. Floppy Drive | \$240 |
| 70cm 12mm round shielded cable, DB23s, Pass-Thru, Drive disable and write protect switches. 12 mths warranty. | |

| | |
|---|-------|
| PCM501 A500 0.5 Meg Expansion | \$120 |
| 0.5 Meg expansion board to suit A500 expansion slot. Compatible with A501 but with no clock. | |
| PM501 + (with clock) | \$135 |

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Understanding Sound Digitising

By Andrew Farrell and Daniel Rutter

Digital editing and sampling is fast overtaking the antiquated world of analogue recording. It offers more control, better quality, more possible applications and easier editing.

➤ Given the rumoured arrival of sixteen bit sound digitising (or something very similar) on the Amiga 'real soon now', creative Amiga users will discover they have a very professional tool available for work in the music industry and sound recording

Using existing technology, sound quality is limited to eight-bit samples. This lack of resolution has prevented serious music industry use of the Amiga as a digital editor, however there are still many commercial applications for the quite reasonable sound quality which can be achieved.

To fully understand these and other variables in the world of digital sound recording, let's take a look at what the Amiga is doing now and examine the limitations which exist,

and how to work around them.

If you're looking for some good examples of what is possible with digitised sound effects, go no further than your favourite Amiga game. Many titles include digitised music or sound effects.

These sounds have been captured from traditional recordings using a sound digitiser or sampler.

Games make good use of these samples, often combining several short pieces to construct a larger more complex musical accompaniment to the game action.

Most sampled sound effects in games consist of explosions, engine noise or weapon fire. These noises can be recorded at a low sampling rate which does not consume large amounts of memory.

Of more interest are the sound tracks which combine both digitised instrument samples, and synthesised sounds. These demonstrate how music sequencing programs can take a single digitised sample and use it as an instrument, or sound, which can be reproduced at whichever note the musician specifies.

Programs which allow you to arrange music this way include *Soundtracker*, *MED*, and *Sonix*.

Often times you will hear a sound

which is more obviously a digitised sample than others - not because of how good it sounds, but because of distortion, loss of detail, chopping of high or low frequency parts of the music image and a generally crackly sound - it stands out.

Serious Options

A good sound sample captures the original sound in enough detail to faithfully reproduce it within the constraints of the play back device. A compact disc player happily churns out exactly what the disc manufacturer intended - spewing out around 44.5Khz, or 44,500 samples per second of digital information.

The crisp clean result is then at the mercy of the rest of your hi-fi system - which in most instances, although below specifications set by CD manufacturers, is normally more than adequate enough to hear the obvious improvement in playing digitally reproduced music.

In the ultimate combination of Amiga hardware and digital recording capabilities, the Amiga would provide record, edit and arranging, processing and manipulation tools. It would then output directly to Digital Audio Tape (DAT), which can then be used to master to compact disc. Sound like a

Tutorial

pipe dream? The Apple Macintosh is already achieving this amazing feat.

High end systems such as Yamahas' digital recorder boasts an eight track, 24 channel desk. There are three stereo effects processors allowing up to three effects per channel - for example reverb, pitch and chorus.

There are many more complex processes available. The entire system, including CD mastering, sells for around \$40,000. An Apple Macintosh II running *Sound Tools* from DigiDesigns, along with the necessary 16 bit sampler card will set you back around \$10,000.

Could an Amiga system for about half that cost handle the job? In theory yes. In the United States, 16 bit samplers do exist which can be used to create sample that can be later downloaded into a MIDI keyboard. Locally, there are rumours of a system which could make these samplers redundant and provide an amazing jump in the current quality.

Technicalities

But why is everyone chasing 16 bit quality? Two factors decide on the final quality of your sample. The first of these is the frequency or sampling

rate. The more times you sample a sound, the more accurately the digital sample can express changes, however slight they may be.

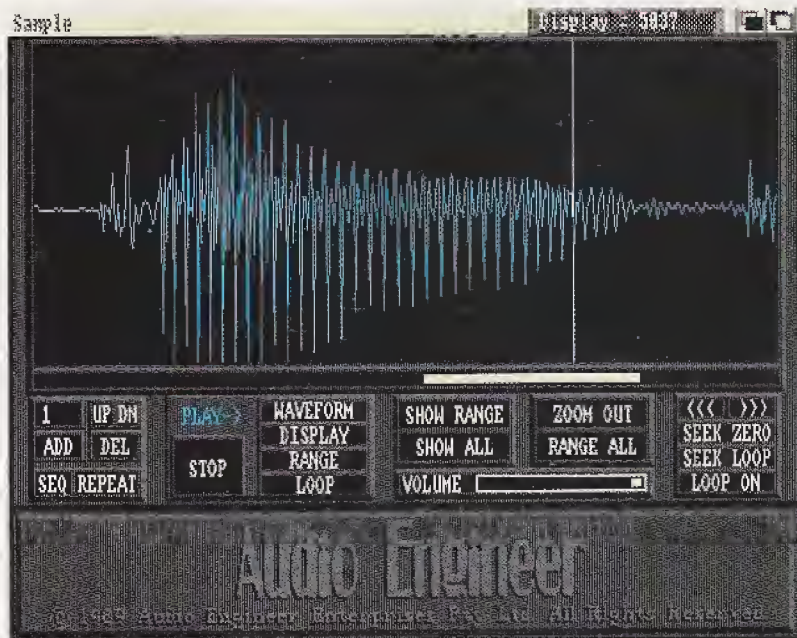
The standard Amiga sample rate used by most music programs is a mere 8363 samples per second - slow compared to a DAT player which can hit as high as 48,000. The faster you sample, the smoother the transitions, the better the quality.

However, the best Amiga digitiser can clock up 56,000 sps, but it is only eight bit. So what's that matter? An eight bit computer memory register can hold a value between 0 and 255. In practice this number is used to represent a variation of -128 to +128. This value represents the amplitude or volume of the signal.

A sixteen bit register can hold a value as high as two to the power of 16, which is around 64,000 - giving a practical amplitude resolution of between -32,000 and +32,000.

In practice this means a 16 bit sample is able to record much smaller fluctuation in the volume of a given sample, which is critical when recording very soft sounds.

The inability to reproduce these slight variations introduces a degree of distortion. The amplitude resolution



GLOSSARY

ALIASING - What happens when your sampling rate drops below the frequency of the sound being digitised. The high waveform loses coherence and starts sounding very weird.

AMPLITUDE - The distance between the top of a waveform and its average (zero) position. The volume or loudness.

ANALOGUE - The conventional way of recording sound using voltage changes to represent waves.

FREQUENCY - How many waves pass in a given period of time. Measured in Hertz (Hz). Equals wavelength times velocity.

LOW PASS FILTER - Stops sound chip making any sound above 7500Hz. It can be disabled by software or hardware, and this greatly improves treble response, but also makes any noise in the sample stick out a mile. An incidental side-effect of disabling the filter turns off the power light on the A500, and dims it on the 2000. The 1000 is a problem - the filter can only be hardware disabled.

SAMPLE - Noun: digitised waveform, also refers to the file in which the waveform is saved. Verb: to sample, describes the act of digitising a sound.

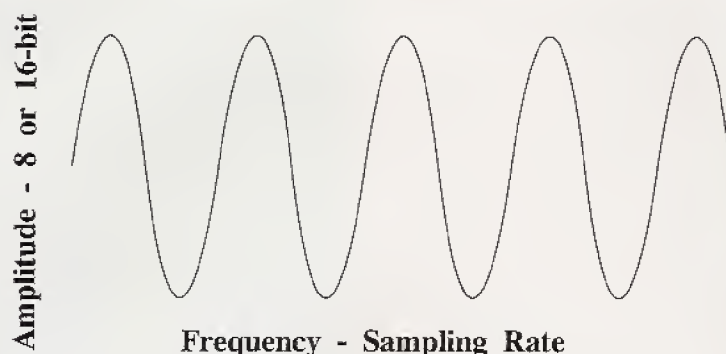
SQUAREWAVING - What happens when input power is too high, and the sample's amplitude runs off the top and bottom of the amplitude scale (+128 for eight bit samples). Waves that should have definite peaks have them cut off, making the sound very rough.

VELOCITY - How fast the wave moves. Sound in air at sea level manages about 340 metres per second. The denser the medium, the faster sound travels - so the higher up you go, the slower the speed of sound gets, until it reaches zero in space, where nobody can hear you scream. And yes, the movie is on tonight, since you ask.

WAVEFORM - The shape of a recorded sound - visible in the edit window of digitising software. Also refers to the digitised sound in its entirety.

WAVELENGTH - The distance between a point on one wave and the identical point on the next, peak to peak, trough to trough or whatever. Equals frequency divided by velocity.

By Daniel Rutter

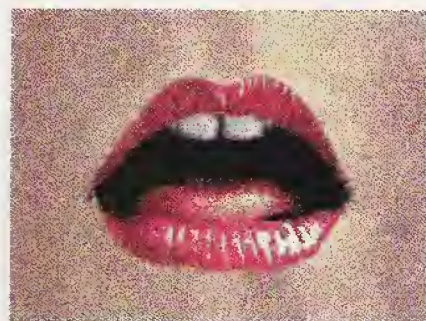


is often referred to as the dynamic range.

Given that many digitising applications do not require high quality results, but are merely taking advantage of the computer's ability to modify, distort and replay a digital

recording, the lack of dynamic range is not a problem. However, for serious music applications, this limitation is a serious consideration.

A 16 bit sampler for the Amiga would probably cost over \$1,000. The software would be expected to support



all sorts of bizarre functions. The question of demand arises in order to substantiate such development. According to proponents of the Macintosh based solution, such development has been worth while.

Sampling Rates

Understanding the benefits from maximum settings for sound sampling plays little part in the day to day requirements you'll probably encounter.

Most sound samples are a happy compromise between acceptable quality and required length. Sampling inevitably consumes vast amounts of RAM. Memory constraints can mean you'll have to be happy with a lower sampling frequency in order to get the required length.

Many sound sampling programs only support recording directly into available CHIP memory - a part of the Amiga's RAM set aside for access directly by the video and sound chips, as well as for general data storage. However, once again, Audio Engineer has created new limits. It makes full use of as much contiguous RAM as is available - so you can digitise as large a sample as you have a single available chunk of free RAM.

When making the decision of how to trade-off sample length for sample quality, a basic understanding of waveforms will come in handy.

If you are trying to digitise a frequency of, say, 500Hz (a little higher than the D above middle C), you are going to need at least 500 bytes recorded every second, or you aren't going to have enough of a sample to record every wave and your sound is going to be very distorted.

Sound Sampling Hints

- ⇒ Check VERY carefully that your samples don't squarewave - i.e. don't run off the top of the amplitude scale. This wrecks the sound quality, and is a special problem when working from CD, with the extra-wide dynamic range of digital sound.
- ⇒ Try to keep sound sources on the same electrical circuit as the computer - if your source is isolated, any AC components will be on a slightly different oscillatory timebase, and you'll get whining interference. I did some samples from videos and they've all got the "Squeeeeee" overtone on them. The problem is largely eliminated by using devices which run from DC adapters or batteries, but there aren't many of those that are worth sampling from - a baby CD players would be an exception.
- ⇒ ALWAYS turn off the high frequency filter for playback - it makes a HUGE difference. If your sample sounds better with the filter on, it can't be much of a sample.
- ⇒ To get decent fake stereo from a mono sample, copy it to two files with suitable names and either put a slight echo onto one file, or a small initial delay, or both. Don't modify both files, or you'll end up with mindbending mush guaranteed to boil the brain of the listener.
- ⇒ Always use good connecting cables, and keep them as short as you can. Both of these reduce attenuation and noise - you'll not get much garbage from a foot of shielded oxygen-free copper coaxial. Don't use those silly gold connectors. The cheap ones rub off, and they only improve contact when both terminals are gold - otherwise they just promote corrosion.
- ⇒ If you're short of disk space but not memory, try sampling at a high rate and using a utility such as Pro Sound's compression facility to squash the sample to half its size. Signal-to-noise ratio works out better because the garbage comes from outside the system, not inside.
- ⇒ When compressing sound samples for modem transmission, postage or whatever, use PowerPacker. Nothing else gets significant compression of the sample's very complex data.

By Daniel Rutter

In practice, you will need about 1000 samples per second, because with only 500 you have functionally no chance of hitting the peak of every wave with each sampling 'shot'. If you synchronise wrongly, you may only sample the places where the amplitude is zero, as the wave passes the zero line.

This will give you a sample containing a whole lot of nothing in particular. And even this is probably not going to be enough, as a waveform's shape has as much to do with its sound as its frequency.

A sawtooth shaped wave has a sharp, violin or brass tone, while a square wave has a tighter, resonant bell tone. So you need a sampling rate high enough to catch the bits of wave going up and going down, not just the peaks and troughs.

Unless you're recording a single, monotonous noise, you're going to have higher frequencies in there that will sound very odd if you don't hike the sampling rate high enough to catch them. Even if all the instruments playing stick to low notes, all instruments have overtones and resonances that give them their character, and these can often be much higher than the note you think you hear.

A male voice actually has more high tones in it than a female one, and sounds very indistinct if they're filtered out - but you would still say the male voice is lower.

All the above considerations apply equally to these resonances, so in the end the sampling rate usually stuck to for mundane digitisations is around 10000 samples per second.

Professional Applications

In the commercial world, there are some often used applications of sound sampling we probably take for granted.

Radio stations, television studios and the like are equipped with huge libraries of sound effects machines to help make those embarrassing moments that little bit more infuriating for the show hosts who dare do it all live.

Many of these effects are digital samples. In fact, some are performed by the Amiga. Club Veg, a popular radio show on Sydney's 2MMM radio station, is hosted by Mick Davies - an avid Amiga user. Mick has been looking closely at using the Amiga for generating sound effects.

Their problem is the simple requirement of having a hundred or so samples on call at the push of a button. No doubt an expanded Amiga 3000 with *Amiga-Vision* could do the trick. For off-line effects, the Amiga is ideal for arranging samples and altering them ready to be recorded on a looping-tape.

Audio Engineer, a locally produced audio sampler with software, currently offers the best sampling and editing facilities, including digital sequencing.

There are numerous special effects you can obtain, with a sampling rate of up to 56,000 sps, the quality is excellent compared to most units which would be fortunate to reach half this figure.

Possible Effects

One of my favourite effects is to flip a sample and play it backwards. Apart from creating subliminal masking for supermarket background music, this option certainly provides a good deal of novelty value. However, there are other more practical effects which are also available.

Echo provides that familiar standing in an empty factory sound. With *Audio Engineer* you can set the rate in 1/60 seconds.

The Decay rate controls how soon the echo fades away. For example, a value of 50 will make each consecutive echo 50% quieter than the previous. For those sale time voice overs and horror movie type screams, Echo is ideal. It can also be used to enhance instrument samples.

Mixing Waveforms can be used to add depth to a sample (by mixing a sound onto itself), or to combine additional sounds. The 'Flange' option determines the pitch at which the new data is applied.

A sample can be tuned by varying the rate at which it is played back. This function can dramatically affect the quality of the sample if used to extremes, but slight adjustments, especially of voice recording, can dramatically alter the voice quality making a male voice sound female and so on.

An entire sample can be moved up one octave, chopping the waveform down to about half its original size at the loss of some fidelity.

The limitation of simply varying the sample rate can be overcome using 'ReSample', which changes the waveform's sample data permanently without loss of quality.

Samples can be edited, using simple cut and paste functions. You can even zoom in on part of the sample and edit the displayed data by hand. Although a little primitive for altering sound, this facility is ideal for carefully removing unwanted noise.

Some of these effects can be handled in real time, including echo, delay and flanging - ideal for experimenting with a sample prior to selecting the final data altering settings.

Summary

Whilst the Amiga has a way to go before it could truly compete with other full-blown professional sampling systems, there are many applications for what capabilities it currently enjoys.

Between now and when 16 bit sampling finally arrives, we'd like to hear from professional users of Amiga's sound sampling and processing capabilities by telephone or letter. If you have some experience or tips to share, please contact us soon.

Audio Engineer is available through most Amiga resellers for around \$399. For information call Power Peripherals on (03) 369 7020.

□

Frame Grabbed with *SuperPic*

SuperPic offers a built in Genlock, expandability and a two way frame buffer. Mark Trenery, a regular Superpic user, contributed this in depth review.

➤ *SuperPic* offers a powerful combination of image capture and manipulation facilities ideal for use in the video and art creation studio. With a frame store buffer capable of images in 32,768 colours at a resolution superior to the Amiga, *SuperPic* also offers the potential for future expansion. Combined with the inbuilt Genlock, it appears to offer the complete solution to the requirements of most videophiles.

What you get

Included in the package is the *SuperPic* unit, 15v AC power supply, manual, and operating software. My unit was well packed in a foam box, sealed in a plastic bag. As the device originates from the U.K. no power plug was supplied, presumably to allow easy installation in differing countries. A quick scout around for a suitable AC power connection plug soon rectified the problem.

Physical characteristics of the *SuperPic* are aesthetically pleasing. Its almost perfectly colour-matched to the Amiga in an aluminium case measuring 303mm x 147mm x 53mm (w x d x h). Viewing the unit from the front the user has easy access to five



knobs and two on/off toggle buttons for controlling various aspects of the digitiser and genlock operations.

At the left bottom of the front panel is a standard RCA video input connection for the video signal to be digitised or the background video when graphics/text from the Amiga are to be superimposed. A red LED on the far right shows power on.

At the rear are several connectors for RGB video and transfer of data through the parallel port. My one gripe surfaces at this point - it concerns the ridiculously short cable for the RGB video input connector. This plugs into where your monitor or TV usually connects to the Amiga. The signal is then 'passed through' the *SuperPic* and an RGB video output is provided for normal connection of a monitor to the *SuperPic*. I found it difficult to position the *SuperPic*, with only five inches of ribbon cable between it and my A1000, and still have it readily accessible for operation.

A solution short of moving the monitor from its comfortable resting place on my Amiga 1000 was to make an RGB extension cable. *SuperPic* can then occupy its desk area beside the Amiga and display proudly its collection of control pots and buttons.

Finally a 21 inch (plenty of length this time) ribbon cable and connector plug into the parallel port. This interface is configured for the A500/A2000 however an appropriate gender bender for the A1000 allows compatibility with this machine. I have had no trouble running the

SuperPic on my A1000 with a gender bender and monitor extension cable.

I have recently upgraded to an Amiga 2500 and now use the *SuperPic* with this system. I found that there is an apparent incompatibility with the Commodore A2620 accelerator board. With the A2620 in operation the *SuperPic* software fails to recognize any RAM present in the *SuperPic* hardware.

As a result the user is informed that all digitizing functions will be disabled. By booting the Amiga without the A2620 enabled (reverting to the 68000 CPU) the *SuperPic* works fine.

Unfortunately all 32 bit fast RAM (on the A2620) is also disabled, but the 1MB remaining chip RAM is enough to get by. I haven't had an opportunity to test the *SuperPic* with other accelerator boards. The genlock function works fine with the A2620.

Having the genlock running with an accelerator board is useful when complex high resolution animations need to be transferred to tape. A standard RCA video output and 15V AC connector are also located at the rear.

Operating Modes - Frame Grabber

The two main operating modes of the *SuperPic*, either framegrabber or genlock, have specific boot-up procedures. A toggle button on the front switches between these two modes. I'll first discuss the framegrabbing function.

After a video source is connected, the *SuperPic* may be switched on, followed by the Amiga. The software supplied autoboots. Four menus: project, pictures, tools, and options allow general file functions, image manipulation, control and some special effects.

A three position switch on the *SuperPic* selects normal Amiga display, the video signal, and the real time digitised video. The latter is an accurate preview of the video signal after being digitised by the *SuperPic*.

Note that all three of these views are available while the Amiga monitor

is in the RGB mode. The video input from a VCR for instance is converted from composite video to an RGB signal.

Controls such as brightness, contrast, and colour saturation may be adjusted until the best picture is obtained. (An NTSC hue control is also supplied but is used only on the NTSC versions of the hardware).

Leaving the viewing mode on the framestore setting allows the image to be 'frozen' on screen with a press of the 'Z' key. A perfect digital pause appears before your very eyes. At this stage the image is captured in the *SuperPic*'s memory buffer and is being viewed from the *SuperPic* to the monitor.

To resume viewing of the video signal in real-time a second press of the 'Z' key is needed. This is the framestore facility and has many applications.

Having frozen an image one can then import it from *SuperPic* to Amiga memory. Data is transferred via the parallel port.

Once in the Amiga it can be saved in standard IFF form for later editing in a graphics program. The *SuperPic* software is flexible and supports most Amiga resolutions and palettes including 16 and 32 colour, HAM, and HAM+. Overscan with interlace mode is also supported.

Genlocking

The genlocking mode is straight forward, simply connect an active video source to the *SuperPic*'s video input, switch the unit on and then power-up your Amiga. The genlock can be software controlled by a program supplied with the unit. By selecting this program via a workbench icon, or CLI command, graphics can be overlayed on the video picture.

Whilst using the genlock, the above mentioned brightness, saturation, and contrast controls can still be utilised to enhance or boost those elements of the incoming video signal. When overlaying graphics with a genlock a copy must be made of the original footage in the process.

What's a Frame-Grabber?

► Frame Grabber stores captured images using the same principles as a video digitiser. The difference is instead of gradually scanning a still image, a frame grabber captures an entire video frame in one hit using a memory large buffer.

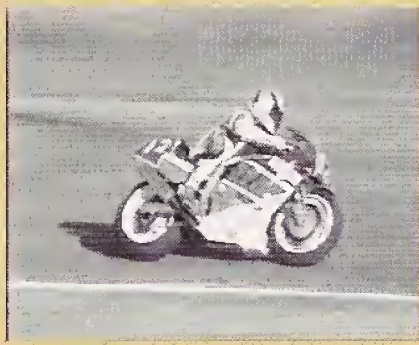
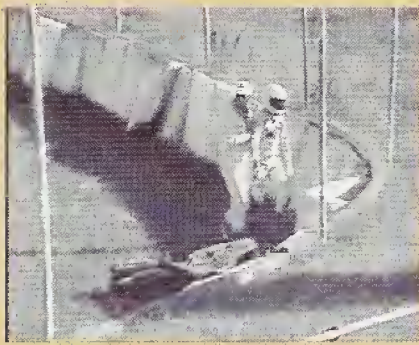
This enables it to grab images from a live video source such as television, recorded video or live camera input. The usual trade-off is a slight drop in colour quality and picture clarity. Due to the rate of motion, many video frames tend to be slightly blurred in parts.

However, the advantages of slow scan (around 20 seconds) digitising can be enjoyed by frame grabbing a still video source, such as a camera focused on an object or a output from the Canon Ion Camera.

Although the frame grabber may be able to capture an image in a very short moment (around 1/50th of a second), the Amiga cannot keep up with this speed. Frame Grabbers are limited by the rate at which they can transfer information into the Amiga. At the moment, this is usually by means of the parallel port. The frame rate will vary depending on the image size and number of colours.

Having these picture controls on the *SuperPic* helps to make the quality of that copy more acceptable as those elements such as saturation which are normally degraded in the copying process can be boosted for the second generation. You could almost say *SuperPic* is a video enhancer unit too!

It would have been better for the genlock to include a fade control, for graphics and video, as there is no switch for toggling overlayed graphics on and off. This has can only be



accomplished through the included software.

Frame Store Output

The framestore facility of *SuperPic* offers some interesting applications. Although not offering specifications quite rivalling 24-bit Targa boards (at US \$3000 each), *SuperPic* doesn't break the bank either. *SuperPic*'s framestore provides output of a digitised picture either to the monitor or composite video out for recording.

The image may have up to 32,768 colours (using 15-bit RGB colour data). Pictures can be saved from the framestore in a special RAW format file. This image can be later uploaded back into the framestore buffer for redisplay.

Very high quality slide shows can be recorded to video tape using this feature. Documentation of this RAW format is supplied for programmers and quoting from the manual "The RAW format is provided for later exploitation."

The manufacturers of *SuperPic*, JCL Business Systems, also state that a small utility program will be provided which may be called by other software to display pictures in the framestore.

Digitising

The digitising software provides for a variety of controls of resolution, number of colours and import/upload functions to the framestore.

Sections of a digitised picture can be framed with a box tool so that only this area is saved - useful for clip-art applications and later cut and pasting.

Up to four images can be temporarily stored in buffers in the Amiga.

Each image can be manipulated independently of the other (such as framing or image processing). With my system memory of 2.5 MB (512K CHIP RAM only) all four buffers were available.

At least 1MB is recommended for use of all buffers. The latest version of the software, V2.1, will operate with 512K, however all four buffers may not be available.

Image Processing

Several tools are available for use with monochrome images. Adjustments are directed towards manipulation of intensities and intensity gradients. Some options included are contrast, threshold, quantise, edge, and sharpness. These functions are especially useful when images are to be used for desk top publishing applications.

Two options allow for a mirror image to be created so that pictures used for thermal transfers appear the right way up - useful for creating T-shirt designs. A multi-capture mode combines several pictures and constructs an average.

This can be very useful when digitising static objects to improve the quality. Picture 'noise' is eliminated by this function. Multi-capture can also be used for special effects when the subject is moving.

Several 'ghosted' images swarm over the screen when for example one digitises the family pet from a camcorder.

Conclusions

My assessment of the quality of images captured by *SuperPic* are limited to non-interlace pictures. This is so for the *SuperPic*'s internal framebuffer is supplied with 192K of memory (the maximum is 512K) which is insufficient for interlaced images. Basing my judgements on lo-res HAM images, the sharpness and colour accuracy is excellent.

Occasionally dithering results are less than perfect with a HAM picture looking more like a 32 colour image, however usually after re-adjusting picture controls on *SuperPic*, glorious (fringe-free) HAM images result.

Of course image quality heavily depends on the original video signal that is being digitised. A blurry, jittery, fuzzy video picture will result in a similar framegrabbed image. For best results, grabbing from a television broadcast or camera/camcorder is recommended. Clear, high quality VHS recordings will also work well.

At A\$1699 the *SuperPic* is not a bargain, especially once the associated equipment (VCR, Camcorder and cabling) is added it becomes an expensive hobby. However an excellent framegrabber, genlock facility and framestore combine to form a powerful DTV package. A limitless amount of clip-art.

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Frame Grabbed with *FrameGrabber*

Progressive recently released a PAL version of the popular FrameGrabber, with new software and a number of hardware improvements.

► Inside the package you'll find version 2.0 software, an 87 page manual, RGB colour wheel and a power supply with a British type wall plug.

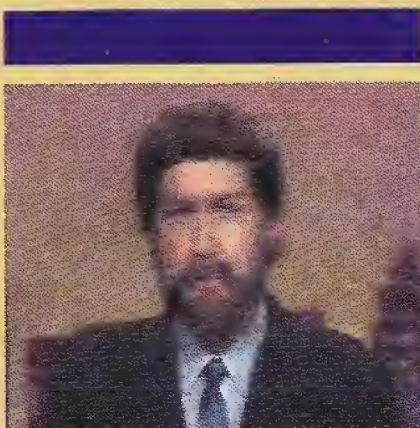
As with *SuperPic*, fitting the correct Australian plug is reasonably simple. The unit is then ready to use. The *FrameGrabber* is about the size of a large modem - a rectangular matt black box. Connecting it up is simple.

You'll need a parallel cable, which is not included, to connect *FrameGrabber* to your printer port. All picture data is uploaded to the Amiga by this connection.

A long one metre cable connects to the Amiga video port. Your monitor then connects by a short cable adaptor to the *FrameGrabber*. With the included cable lengths, the unit sits comfortably next to an Amiga 2000.

On the front panel an RCA socket allows connection of a composite video signal. There are also two potentiometers to adjust intensity and saturation of the picture. The software does not require installation, it is fully self contained - there are no extra libraries of assigns to be made.

Getting started is easy enough. I had a frame grabbed image on screen within a minute or so of loading the



software and selecting grab. However, when it came to working out exactly what was different with version 2.0, the manual was very little help.

Of the 87 pages, 22 offer an explanation of general features and operation. The information is then repeated again in an expanded reference form as an Appendix. Features are not clearly explained, limitations and possibilities are not obvious. The manual needs to be rewritten in a more logical fashion.

I took to reading the information several times. As things started to make sense, I discovered a couple of functions that seemed useful not purely for video applications but also for desktop publishing.

According to the documentation, the hardware is capable of capturing images in 16.7 million colours, which can then be stored in *Digiview* compatible 21-bit or the new 24-bit IFF standard.

In theory, this would also mean back and white images could be stored as 8-bit IFF files, giving 256 grey shades - the same number of shades the editor's picture is scanned in on the First Word page. Images captured from video could be reproduced as 3" x 4" pictures for publishing to a very high quality.

Last month we tested this function out with the Canon Ion camera. Either we forgot to select 8-bit map mode when outputting the page to the Linotron, or the software doesn't perform as described. This issue we tried again only to confront a bug in *Pro-Page* which made the task



Figure 1. 640 x 512 Hires Interlace 16 grey scale - retouched in the in ADG's Art Department.

impossible. It seems that our every effort to see the potential of this application will meet with a technical glitch! Strangely, it was very difficult to get more than 140 grey shades from most video captures.

General Operation

Program functions are selected using six pull down menus, with many options triggering pop up windows. Most contain a number of well organised gadgets, sliders and requestors. On occasion I found additional functions not covered in the manual, such as the the 640 x 512 image size under the image format menu. Keyboard short-cuts are provided for many of the main operations.

Before you start digitising for a specific application, you'll need to adjust a number of settings and options. From the project menu you can select the file type, of which a large number are supported, offering compatibility with a range of graphics and data formats. These include IFF, Brush, Palette, DV21, IFF24, RAW, RGB and IMG8.

From the format control window you can choose your image resolution from 320 x 200 to 640 x 512. Interlace, HAM and Extra Halfbrite modes are supported. You can also choose to fill either the entire screen or a portion of it, with additional frame grabs tiling the screen. A whole host of additional capture options are provided. More on these later.

Grabbing an Image

One of the greatest problems with digitising is the sheer waste of time waiting for an image to capture only to discover it is inadequate. Frame grabbing could potentially suffer the same problem, however like *SuperPic*, *FrameGrabber* offers an adjustable preview on screen of what the intended image will turn out like. Although I found this was not entirely accurate, it was certainly close enough to establish any difference, adjust accordingly and then go on to obtain good images most of the time.

You may grab an entire image or the Red, Green or Blue parts to be combined later - assuming that is you are using filters or a colour splitter. For instant colour images there is a short delay whilst the image is sucked into the Amiga from the external hardware. The display is then gradually generated.

You may abort this process as soon as you decide the picture is not what you're after by pressing the space bar. A further press will send you back to preview mode. The entire process is speedy and functional.

Autograb and Autoanim offer automated colour split digitising or continuous frame grabbing for animation purposes. Unfortunately, for good quality images, the frame rate is way too low for any kind of animation - nothing like the three frames per second of *Vidi*, a low resolution black and white frame grabber for around \$319.

Colour and Image Controls

Apart from the saturation control on the *FrameGrabber* itself, there is a wide assortment of sliders, filters and control over colour and the image in general. Most of these take effect after the image has been captured. Brightness, contrast and saturation can be adjusted using a slider, as can the intensity of Red, Green and Blue in your image.

This makes it possible to further correct an inbound image to compensate for poor lighting, too much of one colour or to introduce special effects. A friendly Undo

button is provided for those who tamper too much.

If you're really fussy, you can opt to view the Histogram Window. From here you can view a graphic representation of what grey levels are found in the current image. For colour work, you can view the 8-bit levels for each gun. You can also select between the Raw data or the Processed image. Other useful functions include; Negative, Sharp, Edge (for line art effects) and Average (softens image) - all of which perform according to their name.

From the level control window additional controls, and a few already familiar ones, are presented in a simple to read slider format. Brightness, contrast are two. Other more exotic ones are Delta, which changes the amount of difference between colours in the palette created for the image. Hue shifts the overall tint of the image through 360 degrees of possible colour from the yellow-green-cyan range through to orange-magenta and back to cyan. Saturation enables you to remove colour with the potential to turn a full colour picture into shades of grey.

Capture Options

You can do a lot more than just capture full screen images. For example, you might wish to capture a series of 16 images at consecutive screen positions 1/16th the size of a normal image. Or perhaps you only want four.

The format menu handles the selection of these functions as well as dithering - handy for turning 16 level grey scale images into smoother looking pictures. The degree of dithering can be dialed up from a little to a real lot from zero to 255. Normal dither offer Floyd-Steinburg patterns whilst patterned dither provides a printed linen effect - or a slight amount of banding.

From the same menu there are a host of extra gadgets, some which may be toggled, others which require extra data to be entered. Border produces a white border around each frame captured - useful for multiple



frames captured in one screen. Date Stamp prints the AmigaDOS date on the image - ideal for database management or industrial applications.

Mirror offers just that - great for silk screening or printing. Oversamp is more curious. By taking multiple samples of an image you can achieve either a strobe effect or average out the images when capturing from a still source to remove noise and distortion. Three or so frames will improve results.

This function is very memory hungry. Fifty 320 x 400 images will fill over 12 Megabytes - perhaps best left to A3000 owners. Multi-Expose is similar, but uses only two buffers, and is therefore a less memory hungry option.

You can also weight the contrast of a capture, helping compensate for too dark or too light images. This can be a problem when grabbing from a still video source such as the Canon Ion camera.

Autozone reduces the area analysed by the contrast weighting function to concentrate on an image 15% smaller than the screen size - this should result in better quality images.

CropDisp also you to overlay multiple digitisations over a portion of the image, without the border intruding into the image. Or you could swap one person's face for another by cropping the display area to the face of one person and then sampling in a new face.

Other Bits

There is no doubt I have failed to mention numerous other bits the

FrameGrabber has. For example, you can create disk based animation of frame grabbed images. Fine if you have a hard drive. This could be useful for stop frame animation. There's also a few options we didn't test such as Print. With all the available ways of getting a bitmap to paper these days, a print option seemed unimportant.

Frustration

All this power comes at a steep price compared to the more conservative Newtek style A/D convertor slow scan digitiser. The Newtek model, although slower and limited to still images, not to mention the hassle of getting the lighting right, has the potential to produce better images.

The Progressive alternative uses a super-fast 4-bit flash converter to slam the image into a frame-buffer quick smart before uploading it to the Amiga.

The results are good, but not as good. That is not to say they lack dreadfully. In fact, we were pretty impressed with the overall quality.

The really frustrating bit is knowing you have a device capable of grabbing a 24-bit image, which has the frame buffer and all the right hardware, but is lacking the few necessary items to turn the image around and pump a 24-bit image back out to a video display.

I would say the future in a high-end frame grabber such as this lies with the likes of Gary Rayner. As you probably read last issue, Gary has built a 24-bit frame buffer for the

Amiga and is already talking about a frame grabber.

Ideally these two devices should be combined. The Amiga is fast becoming a 24-bit graphics machine. This is the future of frame grabbing.

Conclusions

FrameGrabber 2.0 offers sophisticated image manipulation capabilities and includes some very powerful grabbing facilities in almost all Amiga graphic modes.

However the documentation, although comprehensive, is almost impossible to glean important facts from. The instructions jump about and the features are not coherently developed. The Appendix might as well be called a reference guide. There are also conflicts with listed limitations and capabilities and those actually available - sometimes more and sometimes less.

Despite all this, FrameGrabber 2.0 works well. The program itself is well designed, as is the hardware. The results are reasonably good as either a digitiser or frame grabber.

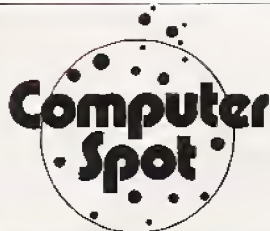
I look forward to seeing Progressive's improved models 'real soon now'. Right now, it's a bit expensive. I would be inclined to wait and see what new offerings appear before rushing into this one.

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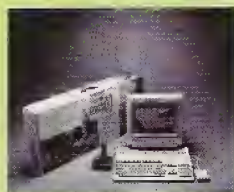
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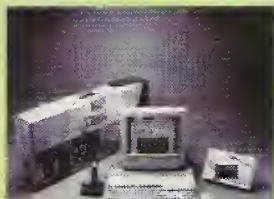


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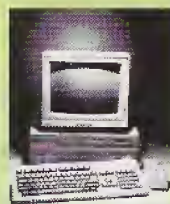
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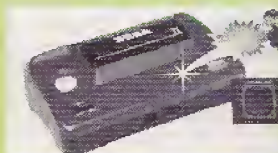
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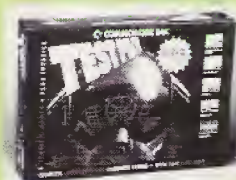
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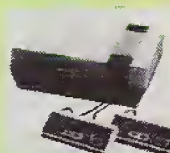
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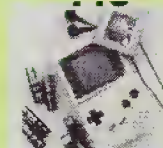
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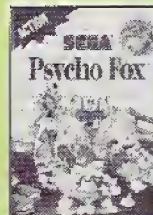
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BANDIT KINGS OF ANCHORED CHINA

An Introduction to Spreadsheets

One of the most powerful business tools available today has been largely ignored by the Amiga community - the spreadsheet. It offers the classic 'what-if' capabilities vital in management, budgeting and cost analysis. Not surprisingly, Amiga spreadsheets compare well with those available on other platforms. What is surprising is how few really understand what a spreadsheet can do. Don Sutton explains.

► Spreadsheets first made their appearance as a business tool on the Apple IIs - *Visicalc*, *Supercalc* and later on, *Multiplan*. Compared to modern day products they were slow and lacked many of the features of today's versions. However they operated on a 64k machine, whereas now they probably use this much memory in the title screens alone.

Shortly after the IBMs arrived, probably the most famous spreadsheet to date was invented - *Lotus 1-2-3*. It is still very popular in the MS-DOS world. This was the start of the 'do it all' business utility.

Spreadsheet programs for the Amiga are divided into two camps, those which were ported or transferred from MS-DOS computers and those designed specifically for the Amiga

and that support the graphical user interface. Of these *VIP Professional* and *Superplan* fit the former category and *Maxiplan* and *The Advantage* the latter.

What is a Spreadsheet?

For those of you who may be newcomers to spreadsheets or computers, imagine a sheet of paper ruled with lines horizontally and vertically. This will leave a series of rectangles which are called cells into which you could enter data.

Imagine the screen as being a window which can be moved across the cells or down the rows. Each cell can have a label or name, a number or a formula. The vertical stacks of cells are referred to as columns. These are normally given letters starting at the left with A and incrementing alphabetically to the right. When the letter Z is reached the next column to the right is given the name AA and this continues with AB, AC etc.

The rows of cells are numbered down from the top starting at one and increasing by one to the bottom of the worksheet. A definition for clarity. From now on I will refer to the program as the 'spreadsheet' and the file created by this program as the 'worksheet'. By way of analogy, spreadsheet is to wordprocessor as worksheet is to document.

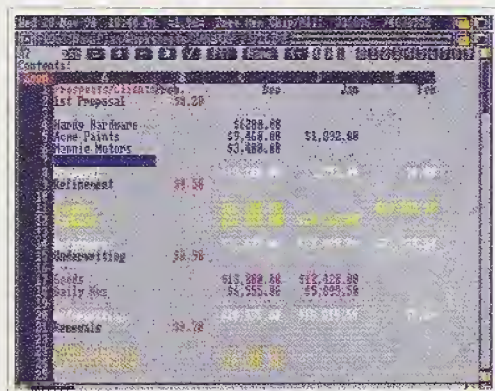
The largest column or row is

dependent on the brand of spreadsheet. In the case of *VIP* it is row 8127 and there are 255 columns. This is a small spreadsheet by Amiga standards, but large by the standards of IBM clones running MS-DOS. In most cases one would not be able to fill up all the cells as the computer would run out of memory - unless you have a fully expanded machine.

Though *VIP* or *Maxiplan 500* will run on a 512k Amiga you generally have less than 100k for a worksheet. This is not as bad as it seems as a simple budget worksheet could easily be run in 40-60k.

The lines dividing the cells are invisible though there are some spreadsheets that will display a grid such as *Maxiplan* and *Advantage*. You can insert dashes or any other suitable dividing character to fill a cell to highlight a cell above or below with most other spreadsheets (not necessary on *Maxiplan*). The cursor fills the current cell and a status line either at the top or bottom of the screen will reveal the full contents of that cell (more on this aspect later).

The column widths are adjustable from one character width to at least 60 with most spreadsheets. The number of cells visible on the screen depends on the widths of the columns and in the case of the Amiga whether or not interlace mode is on.



Rows and columns...

Setting Up a Worksheet

The usual procedure in setting up a worksheet is to plan the format or layout, enter the labels, enter the data and finally add the formulas. An example would be a tally of your year's expenditure with the left most column labelled with the date, the next column showing the cheque number.

Other columns might be labelled as rent or mortgage, electricity, gas, petrol, groceries, clothing and so on - all in row one. In the right column after the cheque number column you would enter the amount of the bill under the appropriate column - for example \$198 under electricity in the row labelled with the date 20-11-89.

At the end of this you would add up the rows to give an account for the expenditure for each day (or month as in our example) and add the columns to give the total expenditure on each item.

This would be done by entering the formula `@sum(B2:G2)` in cell H2 using our example above. You would now simply copy this formula down to the last row of data (ie in H3,H4 etc). Usually a blank row or a row filled with dashes would be inserted between the headings and the data.

You could rearrange this layout so that the titles in the above example were underneath each other in column A with the dates in row one starting at column B and incrementing to the right. Which layout you use largely depends on what you want for appearance and readability.

Note: I have shown the formula above preceded by an ampersand "@". Some spreadsheets require an "=" whilst others require a "+". Read the manual for your particular spreadsheet to determine what is required. The spreadsheet needs some symbol to tell the program that what is entered into the cell is a formula and not a label.

After recalculation of the worksheet the result of the formula will be displayed in the cell, not the actual formula. Often there is a feature to allow display of formulas instead of the result as an aid to debugging. If the cursor is placed in this cell then

the cell status line will show the formula.

Calculations

Most spreadsheets can be set to auto or manual recalculation. This is necessary as if you have it set to auto while entering data the entry may be slowed down considerably as the spreadsheet recalculates after each cell entry.

Auto recalc would be used if you wished to see what changes would occur if one or two items were to change in value, the spreadsheet would then automatically update the results. To complete the above example worksheet we would enter a formula under the last data row (it can be a couple of rows down to look neater) we would enter the formula `+sum(c2:c#)` where # equals the last row number of data.

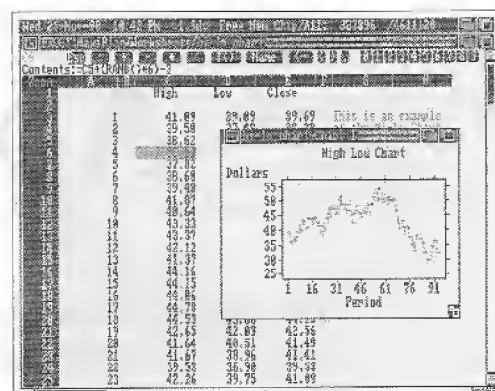
Again we would copy this formula into the other cells in the same row underneath the data. The spreadsheet will automatically increase the row reference if copying downwards or the column letter if copying horizontally.

Finally we would want a grand total. To the left of the last column or below the last row we would enter another formula to either sum the "I" column or sum the subtotals row or sum the entire block of data.

An example of the latter would be (assuming we had filled in 30 rows of data) `+sum(C2:H31)`. The spreadsheet would add all the data in the columns to end up with a total.

Now supposing you forgot or lost a bill, then found it. With your paper worksheet you are now faced with rewriting many figures and then recalculating. With a computer spreadsheet you simply insert a new line at the right place and enter the new data. The spreadsheet will then recalculate the worksheet. If you wish, you could add the new line to the end of your worksheet and issue the commands applicable to your spreadsheet to sort the entries into a specified order.

Projections and budgeting can be handled using the copy function. For example, if you wanted to find out



High-low Charts

what your expenses would come to approximately next year, with a projected increase in the cost of living, this can also be accomplished very easily using an appropriate formula. This is known as "What If". What I have described is a very simplified idea and actual worksheets can be as complex as your imagination and the program allows.

Flexibility

Having the ability to be a simple to moderately complex database and at a pinch a simple wordprocessor adds to the versatility of spreadsheet programs. Most have graphing capabilities where selected data can be displayed in a variety of different types such as bar, pie, histograms etc. Their main use is for number manipulation.

The power of a spreadsheet is the ability to display data in an easily read and organized format with easy editing. The built in formula commands make manipulation of the data into meaningful results easy. A feature found on *Superplan* is the ability to carry out critical path analysis (more on this later).

Add to this the ability to print all or selected parts of the worksheet in a variety of type sizes (dependent on printer) and the ability of some spreadsheets to print sideways and you have a very powerful planning tool which can be used in the home as well as business.

□

Spreadsheet Applications

You may have heard that you can use a spreadsheet for anything, so here is a A to Z guide to what you can do!

Birth Control

Noting the temperature of the woman during her menstrual cycle and avoiding intercourse for around four days prior to and just after the peak temperature is reached is reasonably effective. The temperature cycle usually varies about one degree and is highest during the fertile period.

Using the graph function of many spreadsheets, you could easily identify this time and use it to either avoid or achieve pregnancy. This method is not 100% effective and requires self-control for best results. Ideal for keeping and comparing long term records.

Business Accounting

A spreadsheet can be set up to handle all ledger and invoicing work or to act as a cashbook. Data entry can be made easier by writing macros so that cell entry is under program control.

Comparison Charts

Comparing features, facts and figures. For example when buying a new car. You might place the brands or models along the top row, enter features in the left column, then put a yes or no depending on whether the model has this feature in the model heading. Other charts could be comparison of prices between supermarkets, or productivity between departments in a business.

Conversion Charts

These can be set up to convert anything from one standard format to another. For example an imperial to

metric conversion chart for pressure. Enter PSI in cell A1 and KPA in B1. In the left column use the data fill command to start a list of pressures in PSI. Starting at or near the pressure of interest and finishing some rows down at the last pressure of interest.

In the next column you would enter a formula such as $=(A2*6.895)$ for this example, and then copy this formula down column B level with the bottom of the list in column A. There will now be two columns, column A with psi and column B with the equivalent in KPA. The B column would need to be formatted with the format command to reflect the number of decimal places you wish to show.

You could also make this chart universal by entering a conversion factor in say cell C2 and then altering the formula to the following: $(A2*\$C\$2)$ (A symbol is not necessary in this case). Note the "\$" in the formula. This prevents the copying process changing the cell of reference containing the conversion factor, making C2 a constant.

A \$ sign in front of the letter makes the column absolute and a \$ sign in front of the row number makes the row absolute. Some spreadsheets such as *Superplan* do not allow semi-absolute cell references, most however allow either row or column, or both, absolute. Now when you want to change the conversion chart to something else you would change the title in A1 to the standard you wish to convert from and B1 to the standard you wish to convert to then enter the conversion factor in C2.

Calendar Charts

Using the date functions a calendar can be created of your own layout. There is an example on one of the Fish disks that will run on *VIP* and by using the *Lotus 1-2-3* file load features of *Superplan*, *Maxiplan* & *Advantage*, could be made to run on these.

Graphic Presentations

After entering the data into the worksheet this range can be selected and a graph type chosen and displayed to impress your boss, spouse, friends maybe even yourself.

Fee Payments

Put names in column A and head other columns to the right with the dates due. Put the amount paid in the cells below.

Maintenance Programs

List your machines, have a column displaying worked hours and another showing when a service falls due and then a formula in another column displaying whether or not the service was due. An example of a formula would be: $=(b3>=b4),"Due","Not Due")$. When the "@if" condition is true ie. b3 is equal or greater than b4 the cell will contain the word "Due", else it will contain "Not Due".

Note: Syntax may have to be changed slightly from that above to suit your spreadsheet and will not work on some spreadsheets such as *VIP* or *Maxiplan* as text and a formula cannot be mixed (with versions available at time of writing). With *VIP* or *Maxiplan* a number would have to indicate if a service was due. Also note that the above would work on

later versions of *Lotus 1-2-3* but I did say that *VIP* was a clone of version 1A.

Payrolls

Can be set up to handle a company payroll, keeping track of the total tax, holiday hours, worked hours etc and printing pay slips.

Production Schedules

Many spreadsheets can handle time allocation, project management and scheduling of tasks. Graphs can be generated to represent time consumption of production costs.

Parts Lists and Inventories

Simple database list management, universal updating using macros and relational functions can handle parts or inventory lists. Ideal for price lists too.

Recipes

Commercial production of anything from cakes to chemicals requires the input of a large number of varying products with quantities and costs - an ideal spreadsheet application. The ingredients would be listed in a column, the price of the ingredients in the next, the number of tyres to be manufactured in another cell. Then another column set up to show how much of each ingredient is used per tyre. A further column would then show (using a suitable formula) the total amount of ingredient to be used for the batch per ingredient.

Another column would show the total price of each ingredient and at the bottom the total cost of ingredients for the batch. Of course you would probably add labour, transport and other overheads, and from this a total cost price would be calculated again using further columns and rows in this spreadsheet.

Now in some months' time when the labour rate has risen or the ingredient price has changed it is simply a matter of adjusting those things that have changed and an updated result will have been attained.

Recipes (Home)

Home style (your favorite cake or your mother's?). Enter the ingredients and the number of people it



serves. Have another column for entering the number of extra people it is to serve and the spreadsheet with a suitable formula in the cells in this column. Display the changed quantities required and if you're clever enough the revised cooking time (the latter tends not to be linear). What you do with .3 of an egg left over is your problem.

Reports

Export portions of the spreadsheet into wordprocessors or databases or create a report within the spreadsheet which may reference certain key cells to produce a regular report such as a monthly sales report. (See heading Graphs)



Roster Lists

Time sheets or rosters can be listed and hours averaged and totalled along with amounts due, automatically deducting tax. Use Employees down one column and days across the top with three columns under each day for start time, end time and number of hours. Keep track of hours spent on a job by an employee and hours per job for all employees.



Finance

Track shares on the stock market (feeling brave?), mortgage repayments, calculate adjustments, loan amortization, repayment period and whatever else you lay your hands on a formula for.

Quotations

A list of items can be placed in a column with other columns set up to reflect labour time, labour cost and other overheads to arrive at a job cost. Gantt charts (a form of horizontal bar graph that starts and ends each plot according to cell criteria) can then be used to produce a timing schedule.

Using RAD: to Speed Things up!

► A hint for users of spreadsheets such as *VIP Professional* and *Superplan* or any program that uses overlays, and who have more than 1.5megs of RAM and are using WB 1.3. Mount the RAD: device and diskcopy the Program disk to it. Double click on the "copy of <Program name> disk Icon and load the Program from here.

The owners manual states that *VIP* will not work if copied to the RAM Device however when *VIP Professional* was written a RAM device such as RAD was not available. The program will be a joy to use with its much increased speed, (faster than reading from the hard disk) no more waiting while it searches the program disk for the overlays that it requires when you do a copy or move etc.

Obviously calculation speed cannot be increased by this method. If you change any of the defaults for the spreadsheet permanently remember to copy the default file back to your program disk before switching the computer off or rebooting. I have set this up to run from an Icon using *IconX* on my own setup.



Understanding Spreadsheet Functions

Spreadsheets have more than the ability to simply add up. Powerful commands provide database, statistical and mathematic functions which can turn data into information.

► Earlier we looked at some functions used in spreadsheets to obtain results. Let's go into these in a little more detail. It is beyond the scope of this article to cover every feature of the functions and every spreadsheet program. I intend to cover what I consider are the most popular functions.

Most people would use only a quarter of the features available in most spreadsheets - different people using a different quarter. After reading this article you may wish to consult the user manual for your spreadsheet and experiment.

More information can be gleaned from books available from your bookstore. Also, study any sample worksheets included with your program disk. Check your local Public Domain outlet for some ready made worksheets.

Amicus #11 has templates for *Analyze* and Amicus #18 has templates for *VIP Professional*. Some are Macro controlled from a master menu. These are written for *Lotus 1-2-3* and have to have the file names modified on the disk as well as the file name references in the macros in the main menu spreadsheet to run under the fussier *VIP Professional*.

I have shown in the following functions the *VIP Professional* syntax for these functions. For *Maxiplan* and *Advantage* substitute the "=" for the "@" preceding the function whilst *Superplan* uses the "+".

There will be other subtle differences between the syntax of commands between spreadsheet programs. I have chosen *VIP* because it is a true *Lotus 1-2-3* compatible. However, most of the available spreadsheet pro-

grams can import a worksheet from *VIP* or *Lotus 1-2-3*. *VIP* also saves files in *Lotus 1-2-3* version 1A format.

Note: All the values shown in the above functions and ones to follow can have the actual values replaced by cell references or named ranges providing the named range is one cell or a @Lookup function is used to locate the data.

Financial

@IRR (best guess, series/range of cells with cash payments) Internal Rate of Return - Finds the approximate internal rate of return on a series of cash payments made at regular intervals. You put in an estimate of the answer followed by a comma and the range of cash inputs.

@NPV (rate, values) Net Present Value - Enter the interest rate followed by the range or values of cash flows to give the present value.

@FV (payment, rate, term) Future Value - Enter the amount of the payment, the interest rate, and the number of repayments to return the shocking figure of what you have really paid for your house, car etc.

An example of an entry in a spreadsheet would be: @FV(150, 13.5, 20*12) the 20*12 means 20 years by twelve monthly payments. The 150 is \$150/payment and the 13.5 is 13.5% interest rate. Did you spot my deliberate mistake?

The interest rate is normally quoted per annum and here we have the monthly rate. To change this the 13.5 must be divided by 12 to give a correct result which must also be in decimal value. It is simpler to multiply

the monthly payment by 12 so the above example modified should read @FV((150*12), 13.5, 20) giving an answer of 154491.4.

@PMT (principal, interest, terms) Used to calculate mortgage payments For example a. Loan of \$50,000, Interest of 13.5% over 25 years.

Date Functions

The usual date functions allow you to create calendars and perform arithmetic on dates to find the number of days between dates, day of the week etc. They usually work on a serial date ie. the day of the month and year is converted into a number on which the functions operate.

By formatting the cell/s with the format range option the desired date display format will be displayed such as DD-MMM-YY, MMM-YY, DD-MMM etc. The most common date functions are:

@DATE(YY, MM, DD) Calculates the serial date number from the date numbers ie. if cell A1 has the number 90 (note last two digits of the year unless your spreadsheet handles more than 200 years), B2 01, and C1 has 26 then entering the above function into cell A3 will give:- 32899.0 and if you now format this cell for the DD-MMM-YY format will give 26-Jan-90.

If you now wanted to make a chart with a row or column of dates you would simply put this formula into the next cell (a3 + 1) for the next day or (a3 + 7) for the next week.

This formula would then be copied down the column or across the row with the same area formatted as a date display.

@TODAY Gives today's date. Would be used where daily or worksheets with the current date are required.

@DAY Finds the day of the month from the serial date ie. if the above example date was used **@DATE** (32899) would return 26 (*VIP* only). As the start date of the internal calendar depends on the spreadsheet program being used, the number produced will be different. *VIP* starts January 1, 1900 and *Maxiplan* starts January 1, 1978 for example.

@MONTH Returns the month from the serial date ie. **@MONTH**(32899) would give 1 (*VIP*).

@YEAR Returns the year.

Mathematical Functions

Enough of date functions, let's move on to mathematical functions. Functions to do with angles normally work in radians (some spreadsheets such as *Superplan* have the function statements to allow conversion from degrees to radians and vice versa).

@COS (cosine of angle) Calculates cosine.

@ASIN (sine of angle) Calculates arc sine.

@ATAN (tangent of angle) Calculates arc tangent.

@COS (angle in radians) Calculates cosine.

@PI Equals pi value (3.1415 926535 with *VIP*).

@SIN (angle in radians) Calculates sine.

The above group of mathematical functions as you would conclude are to do with geometry and would be used where objects have to be set up on a site as with architecture, surveying or setting up of jobs for machining of angles. Doubtless some of you could think of other uses.

The following functions in the **MATHEMATICAL** series are more common in general usage.

@ABS (value) Disregards the sign of a number ie. **@ABS**(-5) returns 5.

@EXP (value) Calculates a value raised to the exponential power.

@INT (value) Returns the whole number portion of a decimal value ie. **@INT**(1.69) would give the result of 1

ignoring any decimal component of a number. It is useful for limiting the number of decimal places in a result with the following format. **(@INT(n*1xx+.5)/1xx)** Where *n* is the number or cell location to be rounded and *1xx* is the number of decimal places ie. 1 would be no decimal places and 100 would be 2 decimal places.

@ROUND (value,# of dec places) Rounds a number to a specified number of decimal places. This function rounds correctly with some spreadsheet programs but may merely truncate a number with others, check first.

@RAND Chooses a random number usually between 0 and 1. Is used mainly for statistical purposes though you might wish to make a Lotto number generator.

An example of a serious use might be where a town planner is planning facilities required for a new suburb and may want to know the effect caused by random changes in neighboring suburbs.

Statistical Functions

@COUNT (list) Counts all items of a list ie. **@COUNT**(1,5,7,6) would return 4 (4 items). The argument can be a named cell or a range of cells eg. **@count(a1,a2,a3,a4 etc)** for more than 1 column or row. Cells need not be adjacent.

@SUM (list) Adds a range, row or column.

@AVG (list) Finds the average of all values in a list, same syntax as **@count()**.

@MIN (list) Finds the minimum value from a list again same syntax. An example **@min(4,7,9,2)** would return 2. The list can be a range name (where the range name refers to an individual cell ie. a named cell) row and column co-ordinate.

@MAX (list) Finds the maximum value, the counterpart of **@min()**.

@STD (list) Finds the standard deviation of a list or range of numbers.

@VAR (list) The variance of a range of named cells, list within a cell or a number of row/column co-ordinates.

Special Functions

@CHOOSE (n,list) Finds the value from the list *n* columns to the right of a row of values. The argument *n* may be a cell reference, named cell/s or a numeric integer value 0 or greater and not greater than the number of values to the right.

An example: The following data is in cells b3 to f3 6,6,9,3. The following formula is in cell a3: **choose(3,b3,c3,d3,e3,f3)** and would return 9 being the third data/cell reference item to the right.

Functions like this become very useful if for example a horizontal tabulated list of data needs to be converted into a vertical list without re-entering all the data items.

A report may have to be generated for a specific month. The cell references are the totals for each month and the argument *n* is the month in question.

@HLOOKUP (x,range,offset) A variation of choose. This function looks up a table rowwise ie. horizontally. The "x" is the column ie. you are looking for a value in "x" columns to the right in the specified range where range is top left then bottom right eg. A1.G6 or a named range. Offset is the number of rows below the top row.

An example - In cell A8 we may have the following formula **@HLOOKUP(3,B1.H6,4)** this would return 7 since the x value is 3 which makes this column D and the offset is 4 (1+4=5) which gives us row 5. the value in D5 is 7. At least this is how it is supposed to work but does not work on *VIP Professional*.

@VLOOKUP (x,range,offset) The vertical variation of the **@HLOOKUP** function only x is the number of rows down in the range and offset is the number of columns across.

Superplan/Maxiplan Users

The previous two versions of *Lookup* are not used with *Superplan* or *Maxiplan*. The syntax is

+LOOKUP(value,range) where value is the search value and range is a partial column or row. It returns the value of the cell adjacent to the search value.

LOOKUP(2,b1:b5) would return Dog. (I thought I would put the animals in for country readers). If the numbers in the above example were horizontal and the data entered horizontally in the row below then the formula above would be modified to read +LOOKUP(2,b1:f1) and would return the value of cell c2. This is a much simpler and easier to understand implementation of the lookup function than the others.

Now to "sum" functions found on Logistix/*Superplan* & *Advantage* not found on the other spreadsheet programs.

+COL Returns the number of the column from the left that this statement is in. An example the above statement is in column E and would return 5 since E is 5 columns from the left.

+ROW The counterpart of Col and returns the number of the row. This latter command would find more use in Macros than in normal usage since if the row and column indications are not turned off the row number is visible on the left of the screen. *Superplan* however has the option to turn the row and column indication off.

Logical Functions

@IF (test condition,value#1, value#2) If the test condition is met then value#1 is in effect, if it is not met ie. false then value#2 is in effect. An example: @if(a1>b1,1,0)

Would produce 1 if the contents in cell a1 were greater in value than the contents in b1 ie. condition is true and 0 if a1 was less than b1.

With *VIP* or *Maxiplan* you cannot mix text in this expression such as @IF(a1>b1,"True","False"). This is allowable with Logistix, *Superplan* & *Advantage* however. You can use your

imagination with these functions as they can be mixed in expressions such as @if(b1=c2,@choose (a2,b1,c1,d1,e1),@today). I can't imagine anybody needing to construct a formula such as this but I am merely illustrating the mix and match option, there could be further "if" constructs for example.

Database Functions

A database in a spreadsheet is not as flexible as a fully featured database such as *Superbase* but none the less can do a very good job. A spreadsheet database is what is termed a flat file database.

Databases in a spreadsheet are normally setup in a portion of the spreadsheet out of the way of the main area. The columns are the fields and the rows the records. What are 'Fields', 'Records'?

Imagine you wish to record the names and addresses of your friends and relatives. A FIELD would be what you would call the type of information you wish to store such as Surname, Firstname, Street and so on, while a record would be all information pertaining to one person.

A fairly sophisticated database can be created however using macros (more on macros in due course).

All of the common database functions are a variation of the statistical functions covered earlier. The functions are prefixed with the letter "D" for, (surprise) database. There are however added parameters to enable the function to find specific information.

I am going to cover just one command as by reading this explanation and also reading the previous section on statistical functions their usage should be clear. All of these database functions have the same format for the parameters.

@DCOUNT (input range,offset, criterion range) INPUT RANGE: Usually the entire database range unless you wish to exclude some irrele-

vant section which would have to be a row/s before or after or column/s above or below a rectangular section.

Any range specified is a rectangular area which can be from 1 cell to the entire spreadsheet but not excluding any cell/s within the specified rectangle.

Offset: The field number minus 1 from the first column specified in the input range. Zero is the first column and each column to the right of this is incremented by 1. If you had a database with the fields as mentioned earlier an offset of 2 would select the field of "Street".

Criterion range: This is the area of the worksheet that determines what data will be printed or copied to an output range. The area that the results will be printed must include a field name and at least one criterion ie. will be headed with the field name and below this will be a data item that appears under this field.

Maxiplan and Database Functions

Maxiplan treats a Database differently to other spreadsheet programs for the Amiga. A database must first of all be defined (up to 63 databases can be defined per worksheet depending on available memory as to size). Ranges must be named and field names are mandatory in the first row of the database.

The database functions then work with named ranges rather than cell coordinates. The database functions work the same as for other spreadsheets.

Database query functions normally output the result of a query to another portion of the worksheet (unlike a true database program which will output the data to the screen). This section of the worksheet is then viewed to see the results.

Spreadsheets and Macros

If you find yourself repeating a sequence of commands or keystrokes, or wishing to offer tighter control over what someone using your worksheet may enter as valid data, macros are the answer.

► Macros are nothing more than recorded keystrokes with a few additional commands thrown in (except *Advantage*) to enable the spreadsheet to make decisions, plus a few commands to duplicate the function keys. I will cover *VIP/Logistix/Superplan* generally before covering *Maxiplan* followed by *Advantage*.

The former three spreadsheet programs have the Macros entered into some cells as text entries in some part of the worksheet where the addition of extra columns/rows or the deletion of columns/rows will not delete part or all of the macros. This is usually to the right of and below the last cell being used in the main spreadsheet.

These Macros have to be named in a special way to be executed either automatically or manually. Automatic spreadsheets run as soon as the spreadsheet is loaded. For small Macros ie. ones to format individual cells/columns/or rows, one would make these manual and in the case of *Logistix/Superplan* would be written as an "Auto" which in the case of *Superplan* will appear under the rightmost pulldown menu for execution by the mouse. These "Autos" in *Superplan* do not appear on the worksheet. Back to Macros.

The "" is used to signify to the program that you are entering text as if you tried to enter the following without first entering the "" the program would immediately proceed to carry out these instructions. The

tilde "~" represents the Return key and when typed into the cell will execute as though the return key was pressed. The above macro would set the current column width to 10 characters wide then move right and set the adjacent column to 20 characters wide.

To execute this Macro it would be named say "W" and the first cell containing the first instruction would be used as the range. The cell could be named using any one of the 26 characters making up the alphabet. You would then press the ALT key and at the same time press the letter to execute the macro. There is one extra character that can be used with *VIP* and that is the number zero.

When this is used the macro will auto execute on startup ie. as soon as this worksheet is loaded into memory by the program the macro/s would run. Each new command can follow in the same cell up to a maximum of 240 characters, but this makes life difficult for debugging etc. It is far better to set the width of the cell to say 25 characters and the next column to the right to say 30 characters for entering comments.

Sixteen characters can be used for the name of a macro apart from the macros to be executed manually as above where they must have / and any letter following. Macros can call other macros and menus can be set up to call specific macros. Each set of commands which are part of one macro must be in the same cell or the next cell below.

The macros are executed from left to right in a cell. And if the cell below is not empty will attempt to run this cell, so remember to have the cell following the last macro empty. If calling macros from other macros name the macro with a meaningful name as this makes subsequent debugging and alterations simpler. The special macro commands substitute for function key or cursor key commands ie. {goto} for the F5 key and {right} for the right cursor key as an example. There are other commands to make decisions for example:

`/XI(C3=C6)~/XMenu~.`

This would test if C3 was equal to C6. If it was equal (true) *VIP* would execute the instruction following the tilde ie. `/XMenu~.` If the condition was not met the macro command in the next cell down would be executed. There are commands for executing subroutines, custom menus and prompting for input.

Superplan Macro Commands

We will now move on to *Superplan* (also applicable to *Logistix* as *Logistix* was the predecessor of *Superplan*). Here the macro commands take a different form with commands preceded by the greater than symbol ">". The commands are divided into commands which are available to "Autos" and "Autos & Macros". The macro only commands allow one to create a more professional front end, if you like to the spreadsheet by not only hiding all

macros from the user but allowing for next constructs, disabling the ESC key and printing custom messages on the screen.

Borders can even be turned off with *Logistix*, a feature deleted from its successor *Superplan*. There are commands that can be used only in macro's as well as commands that can be used in both macro's and auto's. Autos are really just small convenience tools to do simple things such as formatting a number of cells or rows/columns or anything that you find yourself going through repeatedly like the same keystrokes again and again.

Superplan supports AREXX so an alternative macro language is available, though there is nothing wrong with the power of the inbuilt macro language. There is one fault however, and that is the inability to disable the cursor keys when doing an input prompt. This can result in data being input into the wrong cell. An example *Superplan* macro command.

>PGL - Move cursor left one page. Autos can be defined to run from the ALT key and either an alpha or numeric key pressed simultaneously to start. The CTRL key can also be used in combination with alpha keys only. These are also saved with the worksheet and appear under the rightmost menu on *Superplan* where they can be executed via the mouse.

Another example >MENrangeame - Displays a custom menu called "name" in the specified range. Up to 32 menu items may be defined per menu as against eight for *VIP*. However the number of characters per menu item need to be restricted to allow this. The command works similar to *VIP*'s XM command. As it is possible to turn the ESC key off a further command to run an optional menu is not necessary.

Superplan has the ability to record macros but it is of use only in creating autos as a full macro is too complex to be recorded as you go. It is also difficult to edit the macro if typing errors are made while recording the macro and necessitates stopping the recording process and editing the cell

then typing the rest manually or continuing despite the error and editing after.

You cannot restart the recording from where you left off. I have found it easier to record the instructions manually in the cells. Note that as with *VIP* these macro commands are designed to be used in addition to normal keyboard commands recorded in the macro.

Maxiplan Plus Macro Commands

It is claimed that *Maxiplan* can use Microsoft *Excel* macros so anyone familiar with *Excel* will probably have little trouble adapting to *Maxiplan*. Note - Only *Maxiplan Plus* has macro features, *Maxiplan 500* does not have macro capability. *Maxiplan 3.6* now has *Arexx* support. Instead of placing a macro in cells on the worksheet a special macro worksheet is used called surprisingly, 'Macrosheets'.

A macro can be run on any worksheet by selecting the macro from a requester. *Maxiplan Plus* also has the ability to record macros as you go, but the same comments apply as those for *Superplan* with the exception that *Maxiplan* does not have an auto feature unless you consider all the *Maxiplan* macros as autos. A total of 64 macros can be defined on one macrosheet or if you use named ranges, is reduced by the number of named ranges from 64.

Maxiplan macros where necessary have options to refer to the worksheet or macrosheet. The macrosheets may have more than one macro on them and normally would be set up to cover the required actions relating to a complete project. By this I mean that if a worksheet was created to handle a business budget then the macros that format the worksheet, enter data, sort, print and store data etc. would be on one macrosheet.

You can, of course have macrosheets created which perform a number of utility functions as Macros once created can be run on any worksheet. This would be the case with most home worksheets. Before any macros can be run an existing macrosheet must be opened. This is

carried out as if you were opening an ordinary worksheet. Macros can open a worksheet and paste data between worksheets as you can manually.

I must say that I have found learning macros on *Maxiplan* a little frustrating as *Maxiplan* is not exactly bug free. *Maxiplan* is also not helped by the poor manual with its syntax, spelling and juxtaposition errors. It also does not set out a command and show its various options without assumed knowledge. A number of commands I had trouble getting to work and required some experimentation.

It is not all bad however and quite a few clever things can be done. A couple of example commands. '=MESSAGE (1,0, 'LOAN REPAYMENT CALCULATOR')' brings up a requester with user information. Second example =NEW.WKS Opens a new worksheet.

A hint - leave at least two blank cells between the "=RETURN" command and the next sub-routine. I have found that the macro can fall through and execute the macro below if the cell should find a space accidentally inserted in the following cell. Below is a small example sub-routine which puts up a requester asking if you want to print a worksheet or calling another sub-routine to close the worksheet.

```
PrintIt
=RESPONSE('Print it?', 'Yes', 'No')
=IF_GOTO(#A57=1, #A70)
=GOTO('ByeBye')
=RETURN
```

There are a number of example macros on the utilities disk. Some of the macros in this drawer have not been defined and must be by selecting SET RECORDER from the MACROS menu. Also I have found that if I load *Maxiplan* by double clicking the macrosheet icon I cannot exit *Maxiplan* when I have finished. So far I have been able to exit *Maxiplan* if I load the Macrosheet from within *Maxiplan*.

If you load *Maxiplan* into memory and load a Worksheet then open the Workbench from the pull down menu

and load say a wordprocessor you cannot exit *Maxiplan*. A title bar will remain on the screen which is not a major problem except that it is messy. You can click it to the back. After that you can click it to the front, but no longer do you have a pull down menu so you click it to the back again. This bug was evident in version 1.9 and version 3.6 fixes none of these problems.

If you open a new worksheet from a macro remember to close it or re-enter the macro after this command when you are re-running a macro. If you don't close the existing worksheet the program will eventually produce an error as only three worksheets may be open at once.

Advantage Macros

Macros are not shown on the worksheet and are stored within the program and saved with the worksheet, much the same as Auto's in *Superplan*. This means that there are no decision making commands. They would best be described as autos. They are executed via a pull down menu and a requester pops up similar to *Maxiplan*. *Advantage* supports *Arexx* so any complex macros for business use would need to be created in *Arexx*. Another alternative would be *Scriptit* from the Fred Fish PD collection.

Project Planning

Gantt charts and all that jazz. Suppose you had a company that made widgets. You will come across lots of companies making widgets. The computer software companies know about them as they nearly always have demonstrations or tutorials covering them. In this company you have five employees (we're are only going to have five, ok as it's me thats getting RSI). A widget is to be shipped in March next year and it takes two months to manufacture (starting mid November).

In this time is the Christmas break and annual holidays. Michael draws the product on the drawing board but it will take him over a month to complete all the drawings. Dave does

the roughing out of the casting which takes him a week for the major part and another couple of weeks for the minor parts. Alan and Graham machine the parts and Gerald plates them.

Now, timewise, we have the remainder of November, part of December and January and all of February to complete the project. We know halfway through December all the drawings would be complete with only another week of December in which to start machining. Three quarters of January is also lost to holidays so only a week here and all of February.

What to do as one widget sale will keep the company viable for the rest of the financial year. The first thing you would do is have Michael draw only those items which require the most time to manufacture first so that perhaps they can be started near the end of November.

As Alan does the turning and Graham does the milling, we would get the parts that required the most milling done by Graham and the parts that require the most turning by Alan.

As there is a lot less turning than milling, Alan finishes before Graham and is waiting, so we get him to assist Dave who is now cleaning and roughing out parts that Michael has now completed all the drawings for. And how about that, the parts are completed early February for plating by Gerald.

What I have shown above would not require

a degree to work out but is a simple example of project planning.

With project planning on spreadsheets the ability is there to create and manipulate flow charts, called in this case "Gantt" charts which depict a start and finishing time for any item based on time to complete. These are displayed below each other horizontally as rows filled with "=" in the case of *Superplan* with the finishing time for any item marked with a ">".

Any changes you make can be updated immediately on screen without having to redraw a piece of paper. In other words more science can be built into project planning and less guesstimation. And if you know what a widget is, drop me a line.

□



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Dual Serial Board

*Networking, too many peripherals or just plain power hungry -
there are plenty of reasons to own a dual serial board.*

Tim Struchan put ASDG's version to the test.

► I was tired of scrambling around under the table to change the serial cable from the modem to the laser printer and back again. Then I also started playing around with an updated version of *DNET* (a public domain networking setup) which also uses the serial port.

So I got in touch with Frank Keighley of Desktop Utilities in Canberra - he is the main Australian distributor for ASDG products, and incidentally, does a very good job of delivery and support of his products.

Installation

On the Amiga 3000, this was quite simple - pop open the case, undo the back-plates, and push it in. I'm sure it's as easy on the A2000. You need to have the latest version of the Buster chip (the one that handles talking to the expansion bus), and any recent A2000 will have that. If in doubt ask Commodore or your dealer.

You will need to make up or buy two 9/25 pin adapters for the plugs in the back of the board. Thankfully, these are standard 9-pin to 25-pin IBM PC-AT style cables and all the pin connections work fine.

Software installation is also straight forward. Double-click on the *Install* icon runs an *Iconx* script file

which installs all the necessary drivers and devices on your system disk (or hard disk). No problems encountered. There is also a "ICheck" icon which makes sure that everything has been configured correctly.

The instructions are generally clear, but assume a knowledge of the Amiga and such niceties as mountlists. Beginners would do well to get a knowledgeable Amiga person to help out.

It would be an improvement if the manual didn't overestimate both one's experience of the Amiga and one's intelligence... One omission from the docs was the fact that it was mentioned nowhere which of the two ports was unit 0 or unit 1 - a bit of trial and error was required. Much of the documentation was aimed at the programmer - no quarrel there, except that this was at the expense of the less expert.

About Serial Communications

The Amiga has a single RS-232 serial interface, which can be accessed on two levels: a. Exec Level - consists of the device driver "serial.device" and programmers can access this. b. Dos level - consists of the "port-handler" called "SER:", as in COPY FILENAME TO SER:

The DSB allows both levels of support for up to 32 additional serial ports, by provision of the "sios-bx.device" (to handle Exec level) and "SERX-Handler" (equivalent to the SER: device) and "SERXI-Handler" (equivalent to the AUX: device) for Dos level access. The first goes in your Devs: directory, the second two in the L: directory.

What Do You Get?

Briefly, you get two extra serial ports on the back of your computer, both 9-pin plugs of the standard IBM type (so you can use standard cables, genderbenders, etc). Both of these plugs can be used to squirt bits of info down the cables at speeds of 57600 baud if you want.

One of the few current uses for this kind of speed is to communicate with a serial printer such as a laser printer. The installation of a high-speed Postscript laser printer port worked first go, giving me data zipping down the serial cable to the printer at 57600 baud. (For more information on this subject see the October/November issue of *Professional Amiga User Magazine*).

Previously, the speed was 19200 baud, and there's quite a difference - but the speed with which the printer

handles the data, once it gets there, is unchanged. However, well worth doing, and still reliable. The maximum speed allowed by the Board is 76800 baud.

The only thing you have to do from within Professional Page, for example, is to redirect to the device you've mounted in the "Output" requestor - ie, instead of SER:, I typed POST1:, having mounted (in the startup-sequence) the following device, as it appears in my Mountlist in the Devs directory:

```
POST1:
Handler = L:SERX-Handler
Startup = 0x10000A01
Stacksize = 2000
Priority = 5
GlobVec = -1
#
```

There is no limit to the number of different "devices" you can set up and mount in your startup-sequence or at any other time. The "startup" line gives full control over all the necessary parameters. I have a series of such mountlist entries for different baud rates. In the following entry, Unit 0 will take all of its defaults from Preferences:

```
AUX0:
Handler = L:SERXI-Handler
Startup = 0x0
Stacksize = 2000
Priority = 5
GlobVec = -1
#
```

You don't have to access the new ports by mountlist entries only - you can access them directly from the CLI, with complete control. Other uses of the DSB are: to connect up to another computer with a null modem cable; anyone into MIDI would also find the board useful, particularly as the Amiga's hardware and software is only really reliable up to 19200 baud.

Software Included

Also in the package is a utility called the *Software Dispatcher (SDP)* which allows you to use any software that uses the serial port, without having to modify the program. The trick is that *SDP* impersonates or intercepts the Serial.device - any time that a call is made to it, *SDP* will pop up a requestor which gives you the choice of using the standard serial.device or ASDG's.

The requestor works well enough, except that at times you need to click

on the gadgets more than once to get them to accept your choice. This doesn't interfere with the working of the system, but it is something that ASDG should tidy up.

Other software on the disk are several communications programs which allow you to communicate with the serial ports at very high baud rates - such as Gonzales.

Conclusions

I'm glad I bought the board - as usual with ASDG products, it's well made, well supported and does what it claims to do. The only drawback is the minor problem with the requestor mentioned above. For anyone with an A2000/3000 who needs more than one serial port, this is the way to go.

I should also note that Frank Keighley of Desktop Utilities was very professional and helpful with a couple of questions I had - if he didn't know, he found out from ASDG and faxed the information to me.

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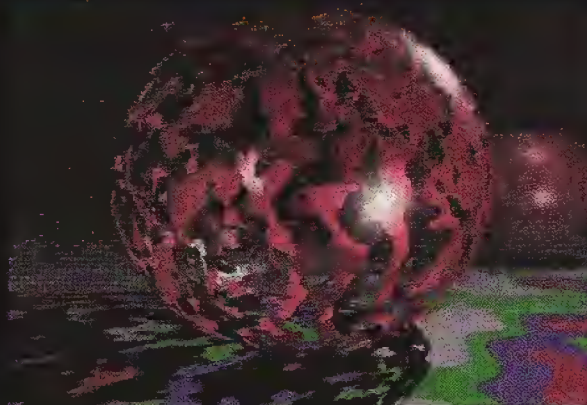
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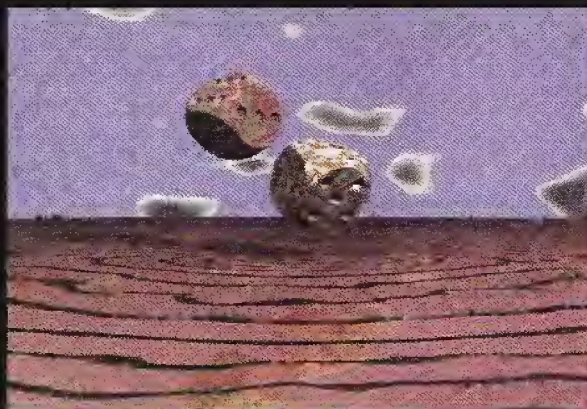
Art Gallery



► Above: One of the very early raytraced images to appear on the Amiga. Unknown author.



► Above: Time for a Drink, a Sculpt 4D rendering by Brett Watson. Below: One of the earlier renditions of the Amiga 3000 front cover - from the last issue of P.A.M. - by Peter Ward.



► All of the above three images were generated using a new public domain ray-tracing program which features a number of interesting textures.

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Art Gallery

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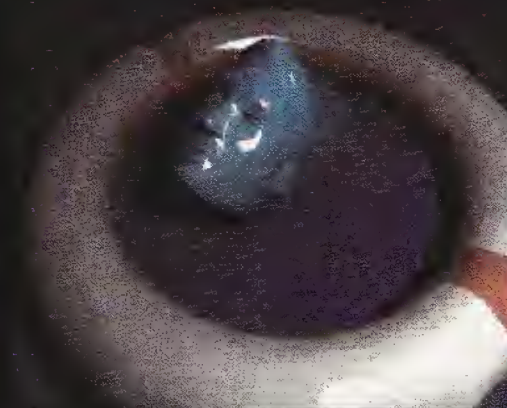


► **Above and Below:** From a recent Fish disk, these cartoon like images were drawn using a touch tablet.



► **Above:** Time for a Drink, a Sculpt 4D rendering by Brett Watson.

Below: Commercial style from this quality hand drawn image. Apart from the obvious trade marks, author unkown.



► **Above:** Thank you to Andrew Thomson for sending us these two Sculpt 4D Ray Traced examples.

Below: Many hours of work have gone into this hand drawn picture. Author Unknown - please contact us if you can help us contact the right person.



Professional Amiga User

Amiga 3000

Adding a second drive

Adding a drive to your Amiga 2000 or 3000 may look simple enough. Doing it yourself can save a few dollars, but there's more to it than meets the eye as Tony Day explains.

► One of the most illogical things about the Amiga 2000 is the arrangement of floppy disk drives. The first drive, (DF0:), is in the right hand drive bay which means that when a second floppy (DF1:) is added, it ends up on the left of DF0:. With the first drive logically named device zero and the second device one, we now have them counting from right to left, against all the rules of accepted convention and logic.

This was particularly annoying to those of us who graduated up to the A2000 from the A1000 or some other computer system (even the TRS-80 had the first drive on the left). Some of the best software available for the Amiga (Quarterback for instance) became very confusing to use as they show the correct arrangement of floppy drives on their screens as reading from left to right.

But of course I loved my otherwise great Amiga 2000. So my own machine, those of as many friends as could be persuaded with the above sound logical reasons, and all the A2000s we have at my work (about five last count), had the floppy drives rearranged so that DF0: was on the left with DF1: to the right. (This involves physically swapping the units positions, a fairly simple process.)

When my Amiga 3000 came along I thought all my prayers had been answered. At last, I thought, they have seen the light - the one floppy disk drive that the A3000 came with was in the left drive bay. This was exactly as it should be - I thought. As the weeks

went by I started to miss the second internal drive more and more and the decision to get a bare floppy drive and fit it into its rightful place within the right floppy drive bay grew closer.

Availability

As the A3000 is a brand new product there isn't exactly an over-supply of spare parts, or even additional parts like a second drive, not to mention the required adaptor plate to fit the drive. This adaptor plate idea is one of the features which well illustrates the obviously well thought out design of the system.

The plate allows the drive to be affixed to it with four screws from underneath, and then the whole assembly is securely held within the drive bay by two tab extensions on the plate which engage into the main drive frame, with only one screw needed to be adjusted to secure the whole drive mechanism.

As I didn't feel like waiting for the eventual arrival of the correct A3000 second floppy drive assembly, I decided to fit one myself using a slightly modified A2000 floppy drive. It wasn't hard to ascertain by looking at the model number of the A3000 Chinon brand disk drive that other than the missing cover plate, eject button and a slightly different LED, it was the very same drive that one can buy as a genuine A2000 bare second drive called a 2010.

About \$200 later and after spending about 40 minutes in the garage making as close a copy as my

limited sheet-metal skills allowed of the adaptor plate that I unscrewed from under DF0:, the second drive was ready to be fitted.

The mechanicals having thus been solved I was presented with a couple of unforeseen electrical hurdles - the first one relating to the two paragraphs at the beginning of this article.

Although the second floppy drive (DF1:) was now fitted to what I believed to be its rightful place in the right hand drive bay, the connection of the 34 way ribbon cable turned out to be a much bigger job than it first appeared.

After setting the correct (drive 1) link at the back of the new drive, I suddenly found that the 34 way connector cable was so short it only allowed the first pressed on connector (the one with no twist in the drive select ribbon lines) to reach the drive on the left. The connector with the twist denotes drive 0 and the way that the cable comes this was the connector at the end.

As it was, the only way the unmodified supplied cable would have reached would be the unthinkable change to move DF0: to the right hand and DF1: to the left. Surely we are not expected to go back to that crazy system, particularly after getting used to having DF0: on the left while it's a one drive system.

The whole problem can be avoided by having just a slightly longer 34 way connector cable so I am reporting this to Commodore and don't see any

reason why it couldn't be successfully addressed. None of this helped me of course, so I had to take the hard way out and take off the first connector, re-terminate it with the required split and twisted cable strands, then repeat the procedure and reverse the twist in the end connector so that it could be attached to df1:. The good news is that I managed to do this without unduly mangling either connector and the whole setup works fine after the following second problem was solved.

After ensuring that the drive select link at the back of the new drive was in the correct position for DF1: I looked for the next step. Having installed a number of second floppy

disk drives into A2000s I knew that there must be a link jumper somewhere on the motherboard of the A3000 that enables the second floppy drive to be recognised by the system.

Now if you have ever looked at the motherboard of an Amiga 3000, it's a large and dense area in which to find a small link jumper. Particularly when one has no idea (although they are all numbered) what number or where on the board the jumper is. Fortunately this is where the excellent documentation that accompanies the A3000 comes in handy. In the back section of the "Introducing the Commodore Amiga 3000" book are a set of schematic circuit diagrams.

And sure enough the very first page of this shows, (with a magnifying glass as the circuits are much reduced) that jumper "J351" enables or disables DF1:. Just move this jumper from its normal "parked" position to bridge the two required posts and after you next reboot df1: becomes fully operational.

And with that the whole thing works - making a machine that is to me an absolute delight into even more of a dream. Now for that 16 meg of 32 bit RAM or perhaps a 200 Meg hard drive or even (extrapolating along the same line) perhaps the poor house, or divorce?

□

Applied Engineering High Density Drive

The more you can fit on a floppy, the quicker and easier you can backup your hard disk. As Tony Day discovered, there is now a new solution for the Amiga.

► One of the things missing from the Amigas' repertoire that has become more and more evident over the last couple of years has been the lack of suitable interfacing for handling High Density floppy disk drives. By High Density I mean the ability to read and write what in the MS-DOS world is known as 1.2 Meg 5 1/4" floppy disks or 1.44 Meg 3.5" floppy disks.

I have always believed this to be not so much a hardware inability, but the lack of suitable software interfacing. Further to this, on a normal double density 80 track double sided disk, an MS-DOS based system can only save 720K as opposed to the 880K for the same hardware on the Amiga. It follows that the Amiga should be able to store a proportionally larger amount of data to a High Density medium if only the interfacing was solved.

About a month ago a company

named Applied Engineering (who have been concentrating on peripherals for Apple computers) entered the Amiga market with an all singing and dancing electronic eject High Density Amiga drive which can save 1.52 Megs of data to a 3.5" H.D. floppy disk.



Double your storage.

I first saw the ads for this drive in the American magazines, and some of the claims such as 1.52 Meg capacity, two-way LED indication, smooth and quiet intelligent electronic disk ejection and more, seemed too good to be true. I was fortunate to have a friend visiting the States at the time

and he was kind enough to bring one of these superb drives back for me.

The drive comes packaged in a shock protected box with a slim but comprehensive and technically detailed 12 page manual.

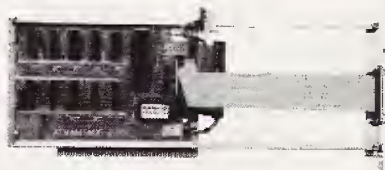
Also included of course is a 3.5" floppy disk with all the required driver software on it that enables the drive to work in High Density mode. The detailed features of the drive, straight out of the manual are as follows:

- * Amiga 880K Compatible - Formats, reads from and writes to standard 880K Amiga disks with no modifications.

This means that, given the slightly extra cost, if nothing else this drive will act as a superb "ordinary" external disk drive. By adding the supplied device driver to your system configuration, over 1.5 megabytes can

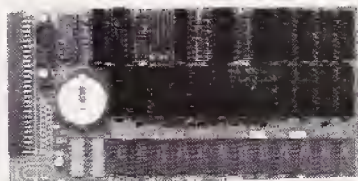
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Adjacent are the test results of five SCSI host adapters using DiskSpeed 3.1 with a Quantum 40S hard drive and a single 40 megabyte freshly formatted partition. The far right hand column shows the results of a simple copy test in which the same drive was set up with two 20 megabyte partitions and 10 megabytes of data was COPIED from one partition to the other. The copy syntax used was "COPY DH1:DH2:all quiet". NOTE: DiskSpeed 3.1 is a product of MKSoft.



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| Host Adapter | Files Create | Open Close | Scan | Delete | Seek Read | 512 Bytes | 4,096 Bytes | 32,768 Bytes | 262,144 Bytes | Copy Test Min:Secs |
|----------------------------|--------------|------------|------|--------|-----------|--|-------------------------------|-------------------------------|-------------------------------|--------------------|
| ICD AdSCSI 2000 | 29 | 50 | 147 | 66 | 198 | Create 78,352 Write 86,133 Read 91,762 | 168,298 190,379 237,763 | 336,807 457,690 457,041 | 392,272 645,277 642,190 | 4:37 |
| IVS Trumpeard Professional | 11 | 41 | 126 | 30 | 197 | Create 28,860 Write 30,139 Read 74,988 | 153,831 189,234 244,848 | 267,899 506,528 499,569 | 313,226 617,093 640,148 | 5:59 |
| GVP Series II | 10 | 35 | 104 | 35 | 204 | Create 29,142 Write 29,909 Read 60,750 | 154,273 187,258 236,531 | 256,876 461,229 432,960 | 311,771 542,842 603,225 | 6:19 |
| GVP Impact 2000 | 10 | 33 | 96 | 31 | 203 | Create 29,048 Write 29,889 Read 54,902 | 142,406 189,413 197,040 | 236,876 419,430 367,216 | 279,620 503,631 486,989 | 6:34 |
| Commodore A2091 | 7 | 26 | 68 | 24 | 200 | Create 15,780 Write 17,559 Read 38,153 | 94,187 116,736 171,451 | 199,728 349,525 413,189 | 224,069 393,312 579,357 | 8:08 |

68030 Results (GVP Impact™ A3001 68030 at 28 MHz with 4 megabytes of 32 bit RAM)

| Host Adapter | Files Create | Open Close | Scan | Delete | Seek Read | 512 Bytes | 4,096 Bytes | 32,768 Bytes | 262,144 Bytes | Copy Test Min:Secs |
|----------------------------|--------------|------------|------|--------|-----------|---|-------------------------------|-------------------------------|-------------------------------|--------------------|
| ICD AdSCSI 2000 | 92 | 145 | 382 | 259 | 783 | Create 206,966 Write 206,331 Read 251,344 | 185,127 193,049 256,840 | 572,357 591,267 589,968 | 691,843 782,600 764,773 | 2:38 |
| IVS Trumpeard Professional | 13 | 69 | 213 | 52 | 667 | Create 29,482 Write 30,152 Read 103,033 | 165,588 189,506 296,395 | 356,833 556,280 560,345 | 440,058 703,631 761,159 | 4:47 |
| GVP Series II | 12 | 64 | 185 | 53 | 768 | Create 28,894 Write 29,987 Read 108,109 | 163,083 189,506 293,158 | 366,214 569,926 550,448 | 443,694 707,339 696,631 | 4:50 |
| GVP Impact 2000 | 12 | 61 | 172 | 54 | 752 | Create 29,372 Write 29,952 Read 54,902 | 162,258 189,506 197,040 | 347,714 562,168 567,216 | 446,648 715,872 486,589 | 4:56 |
| Commodore A2091 | 10 | 46 | 117 | 31 | 752 | Create 29,155 Write 29,902 Read 60,245 | 156,979 188,375 241,109 | 283,458 431,221 531,906 | 301,274 446,276 710,146 | 5:35 |

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be stored using a double sided high density disk (DS/HD). The LED light at the front of the drive indicates drive activity. Red indicates the drive is writing to the floppy and Green means the drive is reading from a floppy.

It's quite amazing to see how little time the drive seems to spend writing, the green light seems to be on about 3/4 of the time of all disk activity.

The unit uses the standard Amiga drive connector lead with a corresponding DB-25 pass through socket at the back for daisy-chaining further drives. The electronic ejection system does not allow disks to be ejected manually or through software, while disks are being written to or read from. This eliminates the problem of destroying disks by ejecting them before the write or read is complete.

As stated above the drive will very happily work as an external disk drive without anything else required other than to plug it in. If the drive is to be used as a High Density drive a device driver called "AETD.Device" needs to be copied to the devs: directory and the required additions as indicated in the manual need to be made to the Mountlist file. Both these tasks can be done for the user by the supplied software with only minimal startup-sequence editing being required.

Installation

I did the installation manually as I feel that gives me somewhat better control and more importantly understanding of what is required to make the High Density mode work. When it all boils down, the drive is called either DF1: or DF2: when in normal 880K mode or as DF5: or DF6: when in high density mode for A500s and A2000s/A3000s respectively.

To enable addressing the drive in high density mode once the required files are in place the Mount DF6: (or DF5: for A500s) command is issued and from then on whenever a high density disk is in the drive it can be

formatted/used as a 1.52Meg device.

The way the drive "knows" that it has a High Density floppy in it is that High Density disks have a second notch or write protect hole, which the drive uses to place itself into the High Density mode. It should be pointed out at this stage that it is totally unreliable to drill a second hole in an otherwise normal Double Density disk in the hope that it will act as a High Density type.

The disk surface coating procedure/formulation is different for the two types of disks - which partially explains the nearly double cost of HD disks. While mixing disks in this manner may appear to work for a while, the ability to read the disk later is uncertain and will not work reliably.

Similarly using High Density disks in 880K mode is unreliable (why would you as they cost nearly twice

"The electronic ejection system does not allow disks to be ejected manually or through software, while disks are being written to or read from."

the price) - believe me I have tried both and suffered as the result.

In fact by the use of a clever device driver the drive cannot be addressed as DF2: or DF1: if it has a High Density disk in it or as DF6: or DF5: if it has a normal Double Density disk in it. The *AEHigh Density Disk Drive* (to give it its full title) has only one problem at this stage that even remotely bothers me and the imminent fixing of that and maybe some further additions from my wish list would make it perfect.

The one problem which I have struck is with the use of the hard disk backup utility *Quarterback*. The thought of cutting the number of floppies to backup my hard drive in half by using High Density floppies was one of the major considerations in me buying this drive. Unfortunately the disks will not eject properly during *Quarterback* use due to a

incompatibility in the device driver.

The good news is that the people at Applied Engineering told me when I rang them recently that there is a new improved driver available now that fixes this. I have sent away for this (although I wasn't happy about having to pay the cost of updating) and will report on it in the future. The response from AE by the way has been one of the best from any hardware vendor that I have had the pleasure to deal with. A "real" and knowledgeable technical person was available to talk and discuss problems with on the phone.

I am also using the high density drive (with the driver active) as a *CrossDos* (version 4.0) drive to write and read 720K IBM disks, and contrary to reports appearing in other fine publications, I find that the two device drivers work well together without any problems or cross interference.

Conclusions

As for what it's like to use - all I can say is that this is one of the best peripherals I have ever bought. It has worked as if you couldn't kill it with a sledgehammer through a number of heavy Fish disk copying sessions. A list of possible additional items for which I don't see any great problems other than that they would possibly increase cost are; Adding the ability to access 1.44Meg 3.5" MS-Dos disk; An internally mountable version for the A2000 A3000 range of Amigas'; The possible addition of a disable switch, something which is a standard item on most external drives these days.

All in all you are getting so many extra facilities for only about 2/3 the price over the cost of an ordinary external disk drive, that this is one of the best buys one should currently consider if the need is there for an external disk drive, and doubly so if the use of High Density mode can be justified, such as for hard disk backups. I hope that some local distributor will pick up the rights to sell this drive very soon. □

Postscript from Preferences

Tim Struchan explains how to get more from your Postscript laser printer.

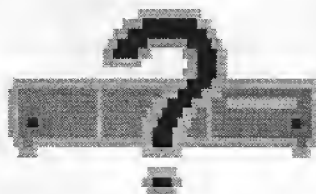
► *PostDriver* is a useful program for anyone with a Postscript laser printer. It is designed to be a complete postscript compatible Preferences printer driver.

This means whenever you use the printer.device (PRT:) the result will be printed on your laser as if it was a dot matrix printer. The result will be the same whether you're printing from the CLI, from a wordprocessor, or from any other program that prints.

The problem with Postscript laser printers has always been that to use them you had to have a Postscript compatible program like *Professional Page* or save your Postscript file to disk and send it out later to the printer. *PostDriver* gives you a lot more use from a piece of hardware you already own.

Installation

In order to use the PRT: device directly with *PostDriver* you simply install *PostDriver* and related files on your system disk, as fully described in the manual. Then, you open Preferences and select *PostDriver* as your printer, and change the type of printer



Preferences

to Serial if your computer is connected to the Postscript printer through the serial port.

Also enter the Change Serial screen in Preferences and change the Baud Rate to that which you're using to connect with the printer - probably 9600 baud, though with the Dual Serial Board (see review this issue), it is possible to get that up to 57600 baud.

Next, you will open the *PostDriver* program and set the various options like page offsets, and font. The *PostDriver* Preferences program is very neat and functional.

The Paper Size, Halftone pattern and Font selection buttons/gadgets have "pop-up" menus. When you click on them and keep the mouse button

down, the menu is sitting under the mouse cursor.

Via *PostDriver* halftoning is possible, or you can experiment with the dithering and halftoning of the Amiga's 'printer.device', ie in the normal preferences program. Paper sizes available include US legal & letter, A3, A4, A5, B3, B4, and B5.

Also, you can specify an 'offset' in points, cm or inches and your print will be shifted to the right that amount on the page. Preferences also affect output, especially the font sizes (pica, elite, condensed). Lines per inch (eight or six), and page length.

All this is reliable, so you can set things up as you like them and stick with it by saving the settings.

The number of copies can be set, thus saving you time when you want to print multiple copies from your wordprocessor.

As well, *PostDriver* provides Thumbnail printing, which allows you to choose your output from a variety of thumbnails, ie scaled down pages, from two to 1024, on the same piece of paper.

Printing

All the tests run on *PostDriver* worked well, including redirection from the CLI to the printer, as in the command `INFO > PRT:`. This test was successful, processing the page very rapidly.

Simple copying of a file from the CLI to the printer, as in `COPY FILE-NAME TO PRT:` was simple and fast. Printing out from my text editors, *PTE* and *Cygnus Ed Professional*, was no problem at all.

Also, *Cygnus Ed* has the advantage of being able to incorporate printer Escape codes (see below) for customised output. Printing a graphic from *DPaintIII* was straightforward, although choosing the 256 grey-scale option slows the process down.

Other features of *PostDriver* include variable resolution - seven levels from 75 dpi (dots per inch) to 2400.

Normally, your text will be printed at 300 dpi for a standard Postscript laser printer, but you can vary the resolution for graphics, and it is recommended that you use the `PS_Halftone` enable option to speed up and improve graphics output. This over-rides and improves on the Amiga's dithering capabilities in Preferences.

When using this, there is a `No-white` feature you can select which outputs a very light grey instead of white to avoid the possibility of the white spoiling the output.

Escape Codes

PostDriver allows the use of both proportional and mono spaced fonts and typefaces as well as the use of Escape Codes. A list of Escape Codes is included in the manual and these codes can be embedded in a file. There are about 50 possible codes and they seem to work fine.

Not all Escape Codes handled by dot matrix printers are included. The manual gives a full list of the codes that are not implemented, some of them being irrelevant anyway, such as perforation skip.

The only confusion again comes in the area of choosing different fonts and typefaces. But there is no problem

with setting up normal attributes such as underline, italics, bold, subscript, superscript and so on, even with the default courier typeface.

A neat touch shows the attention to detail that has gone into the program. It often happens that you want to see the effect of a certain option, without exiting the program by clicking on save or use. With *PostDriver*, by holding down the Shift key while clicking on Save or Use, the program remains but the effects of Saving or Using occur.

Changing Preferences set-up on the fly is also a feature of *PostDriver*. It may be that you want to use both a dot matrix printer and a Postscript printer from time to time, in which case I'd recommend that you use the public domain program "SetAmiga" which allows you to change preferences to something completely different with a simple command or by clicking on an icon, using *ICONX* to run the command from the icon.

Problems

I wanted to change the proportional font available in the main window, so typed in what I thought was correct - "Helvetica", "Helvetica Bold", etc and tried to print. Nothing happened, and from then on I couldn't print a thing.

A fax to Leonard Norrgard the author produced a fast and pretty complete response, indicating that Postscript and therefore the program, was very picky about how you type in those names for fonts. What these names are exactly depends on your printer and other variables, and it's not entirely clear in the manual.

Leonard says the next version will address this problem. My suggestion

would be to describe in greater detail such questions as what are the specific names of the alternative fonts, and how should they be entered in the Proportional Font gadgets?

Generally speaking, a longer and more complete treatment of Fonts in the manual would be welcome.

For example, the listing of Escape codes shows Codes for 10 different typefaces with names such as Orator, Caslon and so on. How these are accessed and what they are is beyond me. A note below these codes mentions the default typefaces, which are the only ones with fonts defined.

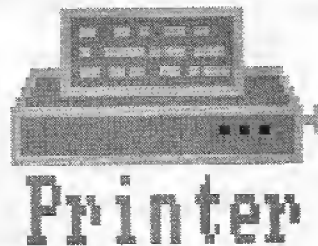
Downloading Fonts

The manual indicates that font downloading (sending all the information for a new font to the printer) is not directly supported by *PostDriver*. It is suggested that you can either append the file that defines the fonts to the Prolog file (which is installed in the Devs: directory) and set the name of the font using the *PostDriver* program.

This, as Leonard admits, is pretty unwieldy, and he intends to incorporate this capability in a future version. But a longer discussion of these matters in the manual would go a long way to both educating users and making them more likely to use the program.

Several companies currently sell Postscript fonts for the Amiga which can be downloaded. These include SoftLogic, Gold Disk and Pixelation - all of which are locally distributed. Gold Disk's new Gold Disk Type series are especially noteworthy in this area.

PostDriver was written by Leonard Norrgard and Robin Rosenberg. It is available locally from Desktop Utilities in Canberra. For further enquiries call (06) 2396658.



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This program list all the information about the device available to AmigaDOS, that is, the disk drives. It displays the various characteristics about the drive such as its geometry and the memory it is currently using.

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CLI control over various aspects of your disk drives.

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Add your own menu options to the Work-Bench pull-down menu.

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Makes the CLI almost obsolete, a file utility program that will make you wonder how you ever did without it.

Zippy

A quick easy to use file copying system.

MSH

A MS-DOS disk reader and formatter. Why buy Cross-DOS when you can have this utility for a fraction of the price? Transfer files to and from MS-DOS disks. Probably the best PD program we have seen in a while.

MRBackup

Backup and restoration utility for your hard disk, supports multiple levels of compression, you should not be without this one if you have any important information on your harddrive.

SysInfo

A benchmark and general information screen that rates your computer versus the various Amiga models with and without GVP accelerator boards.

Disk Talk

A cute little hack that plays an IFF sound sample when a diskette is inserted or ejected. Comes with samples.

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Compiled by Andrew Farrell

Professional Page 2.0

➤ After many long months of rumours, early facts are starting to surface regarding a new release of Professional Page. The new version promises more creative control over your documents.

Here at P.A.M. we're eagerly awaiting the sophisticated new typography controls, enhanced colour design capabilities and improved separation functions.

As Gold Disk keep pointing out, Professional Page is used by more magazines than any other Amiga package. Despite the fact that two major competitors are now battling for the professional desktop publishing market - Saxon Publisher and PageStream - neither have come close to toppling PPage's edge for reliability and functionality. That is not to say Professional Page doesn't have room for improvements!

New Features

Quick text design changes are now accomplished with Professional Page style tagging. An unlimited number of style tags may be defined - specifying font, style, size, line spacing, tracking, baseline shift, justification, kerning and hyphenation.

Design boxes can now be rotated or angled, regardless of whether they contain text, bitmaps or structured graphics. You can rotate a box at any angle either numerically or with the mouse.

There is also greater control over letter and word spacing. Support for AGFA Compugraphic fonts continues, allowing for smooth, jaggie-free output at any point size to any printer. Gold Disk have also released additional

Compugraphic fonts which are Postscript compatible and may also be used for Desktop Video work.

Automatic page number is now supported - you can insert the current page number at any point you specify in the text. This 'tag' is automatically updated when the page number is changed. A built-in word processor (we suspect this is Transcript) provides for quick text writing and editing and includes a 90,000 word spell checker.

You can now (at last) preview multiple pages on screen simultaneously. Up to six document pages can be viewed at any time. Each thumbnail print details your graphic design and text positions for an overall look at your layout.

Adding a splash of colour is easy because of the built-in Pantone Matching System. There are over 65,000 defined colours, and colour dithering allows up to 1,000 colours to be represented on screen at once.

Colour Separation

At the moment, a colour scan produced in this magazine requires the use of four different programs. The new Professional Page will reduce this to three with the ability to import and print 24 bit colour files for colour separation, directly from *Professional Page* without the need for extra utilities. This will save time and be a lot less hassle.

Gold Disk is promising new owners of version 1.31 can get version 2.0 free. If you have purchased Professional Page on or after August 1, 1990 Gold Disk will send you version 2.0 free of charge when you send in proof of purchase with your registration card. (Local availability of this upgrade is unknown -

however it is probable the same FREE step up will be available.) For further information call Dataflow on (02) 331 6153.

Over 600 New PostScript Fonts

➤ Okay, so they're not official Amiga fonts - but you can now access all available Apple Macintosh Adobe fonts using MIFont from Mirror Image.

This fabulous conversion utility will create PPage metric files and Amiga screen fonts from Mac screen fonts and AFM's (Adobe Font Metrics). Most lynchontronic bureaus have a large number of fonts available which using Mac-2-Dos, a modem, direct transfer or A-Max, you could easily transfer to the Amiga. For information try Computer Spot stores or call Mirror Image on 0011-1-416 495 7469.

The Art Department - Professional

➤ For manipulating images, performing 24 bit colour separations, creating line art and adding various dithering patterns to images, few programs come close to ASDG's *Art Department*.

A new professional version is about to be released boasting a dozen new features including AREXX support, more image formats, output to 24-bit film recorders such as the Polaroid CI-3000 and CI-5000, Black Belt System's Ham-E, Digital Creations DCTV and FireCracker-24 (the later two of which all display 16.7 million colour images). A number of additional conversion modules will be available; *Art Department Presentation Graphics Pack* and *Conversion Pack*. For further information contact Desktop Utilities on (06) 239 6658.

□

NetworkingUpdate

With studio and bureau functions requiring resource sharing and huge amounts of storage, Networking becomes a vital option.

Network Update

► A few local Amiga installations are already running Networks - unfortunately we're not one of them (are you listening Commodore?). Once Network capabilities become readily available, and new database products such as *Superbase 4.0* arrive, the Amiga will enjoy a truly expanded range of applications. Here's what's in store.

Interact

This is an AppleTalk-compatible network package for the A500 (US\$300) or A2000 (US\$330), and allows you to also create an Amiga-only network of up to 32 nodes. You can share hard drives and other peripherals and generally do all the usual networking tricks, as well as connecting up to an existing AppleTalk network to take advantage of the resources available on it.

More info: DigiFex, 610 Main St, Oregon City, OR 97045 USA. Telephone: (503) 6568818

EnLAN

This is a Phase-IV, end-node implementation of DECnet, which lets you exchange data with DEC VAX/VMS computers or other Amigas running under DECnet protocol. There are transfer utilities, directory listings and remote access and copying of files. More info from: INTERWORKS, 195 Main St, Suite 230, Milford, MA 01757, USA. Tel: 508 476 3893.

Doubletalk

Does about the same as InterAct above, but comes with its own CPU and 512K ROM so it will not interfere with standard system functions. Security features are built-in.

TSSnet by SYNDESIS

Allows an Amiga to become part of any Ethernet network - linking it into the world of VAX, DEC & UNIX computing. TSSnet also provides a VT100 terminal emulator and can be used to run X-Windows.

With the co-operation of Commodore and ASDG - this is a

fully integrated hardware/software setup. RRP is US\$395 & more info from: N 9353 Benson Road, Brooklyn, WI 53521 USA. Tel: 608 455 1422.

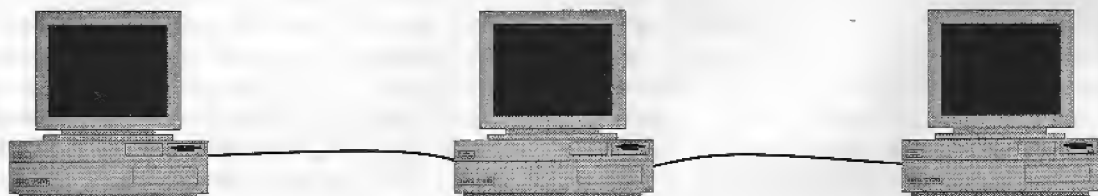
Commodore

A2065 Ethernet Network Adaptor - gives access to 802.3 type Ethernet networks at 10 megabits per second. US\$349.

A2060 Arcnet Network Adaptor - provides full Arcnet protocols, supporting up to 256 nodes. RRP US\$229.

AS220 Amiga Client for Novell Netware - lets you use to A2060 adaptor to communicate with Novell networks running Novell Netware V. 2.15 or higher. Lets you use multi-tasking to run programs under AmigaDos and/or MS-Dos with the Amiga BridgeBoard option. RRP US\$149.

TCP/IP (Transaction Control Protocol/Internet Protocol) & NFS Software - This provides access to many installed networks employing the TCP/IP standard. Suggested RRP US\$199. □



Last Word

Last minute news, industry issues and general chit chat all rolled into one page - published at the last possible moment before going to press!

Another New Amiga?

► Computer Trade Weekly, a U.K. publication, reported the launch of a new Amiga. It wasn't the Amiga 3000, or even an Amiga 4000... no it was indeed the machine that so many industry pundits have encouraged Commodore to build for so long. Yes, the first Amiga 1500 units shipped to a range of U.K. distributors following a low key launch at the Business Computing Show in September.

The unit features 1 Megabytes of RAM, two 3.5 inch floppy drives, a separate keyboard, and a couple of A2000 slots all packed into a box not unlike the Amiga 1000. All this seems to make perfect sense - there is a real gap between the A2000 and A500.

However, the price has us puzzled. Although a whole bundle of software is included, the 999 U.K. pounds you'll have to fork out still seems a hefty price. You could safely double that figure to arrive at an Australia price of around \$2000 - certainly not on the way to filling the A500/A2000 gap. A figure of around \$1299 might do the trick.

Amazingly, nobody I spoke to at Commodore Australia knew anything about this new machine. Neither has it been mentioned in any U.S. magazine. One begins to ponder on the possibility that this is not a new machine, but some sort of weird marketing ploy to

help sell off old software lines.

Some say this new model is an indicator that Commodore intend to position the Amiga 2000 purely as a graphic workstation. None of this seems to gel with the fact Commodore are not yet shipping large numbers of Amiga 3000's. When they do, which should be soon, we can expect to see its price fall, forcing down the cost of an Amiga 2000 and eventually filling the current A500/2000 gap.

Macintosh Users Swap for A500!

► A Queensland newspaper carried the following highly amusing advertisement:

MACINTOSH PLUS
2.5 MEG RAM
3 months old.
Plus software and manuals, also
assorted extras, \$1500
Or will swap for Amiga 500 and
colour monitor. Ph 390 XXXX
All offers considered.

Colourburst Misrepresented

► How does this sound: "Gary Rayner has developed a prototype video paintbox and animation system that industry boffins say will send the broadcast and video production world back to the drawing board... Despite its phenomenal capabilities Gary's system will market for around \$800. His competitors are currently asking \$180,000 for a comparable unit." - *Press Release, Nescafe Big Break*

Awards.

Nothing could be more misleading. Gary has developed a marvelous product - an add on for the Amiga which enables it to display 16.7 million colours.

However, an Amiga which could handle the animation and paint facilities of a system costing \$180,000 has never been built. An Amiga to match the capabilities of a system costing around \$40,000 has. A fair comparison would be around \$6000 for the Amiga solution compared to \$40,000 for a PC based system.

The sad part about this complete exaggeration of the facts is that it stands to greatly diminish any credibility that the Amiga, married with the Colourburst 24-bit frame buffer, might have enjoyed. Sadly, daily press, radio news and some computer publications have unwittingly repeated the above quote. Let's hope that the video industry remains open minded enough to at least check it out before assuming the comparisons are so unbelievable they're not worth investigating.

Where's Workbench 2.0?

Although a recent update to the available range of Beta copies has arrived, the final release of Workbench 2.0 still seems afar off. Here at PAM we're of the opinion that version 3.0 may well be out sooner. □

Contributors

► Professional Amiga User magazine is fully desktop published by people who use the Amiga professionally every day. However, we are not experts at everything! Your contributions are welcome.

We would prefer to hear from others like ourselves who can share real hands-on experience in using the Amiga commercially. Of course, if you're an avid home user with a special skill at using a particular software package, you are also qualified to write.

We can accept material via modem - this is the preferred method. You can also send in a disk containing a clean ASCII text file - that is, one without any special formatting. Pictures, screen-grabs or illustrations should be included separately and be clearly labelled. The most important thing to include is your day time tele-

phone number.

If you're not sure of the style of writing, try reading articles by our staff writers and adopt a similar style and approach. Keep in mind, most of our readers are endeavouring to push the Amiga to its limits.

They need to know how to get more out of package, how to overcome limitations and find new ways to create end produce more efficiently. Product reviews should be coordinated with the editorial office. Materials received may not be returned. Do not send us your original. We do not normally confirm receipt of contributions. To find out if your material has been accepted, please contact us by telephone.

For more information contact the editors on (02) 879 7455 or FAX (02) 816 4714. □

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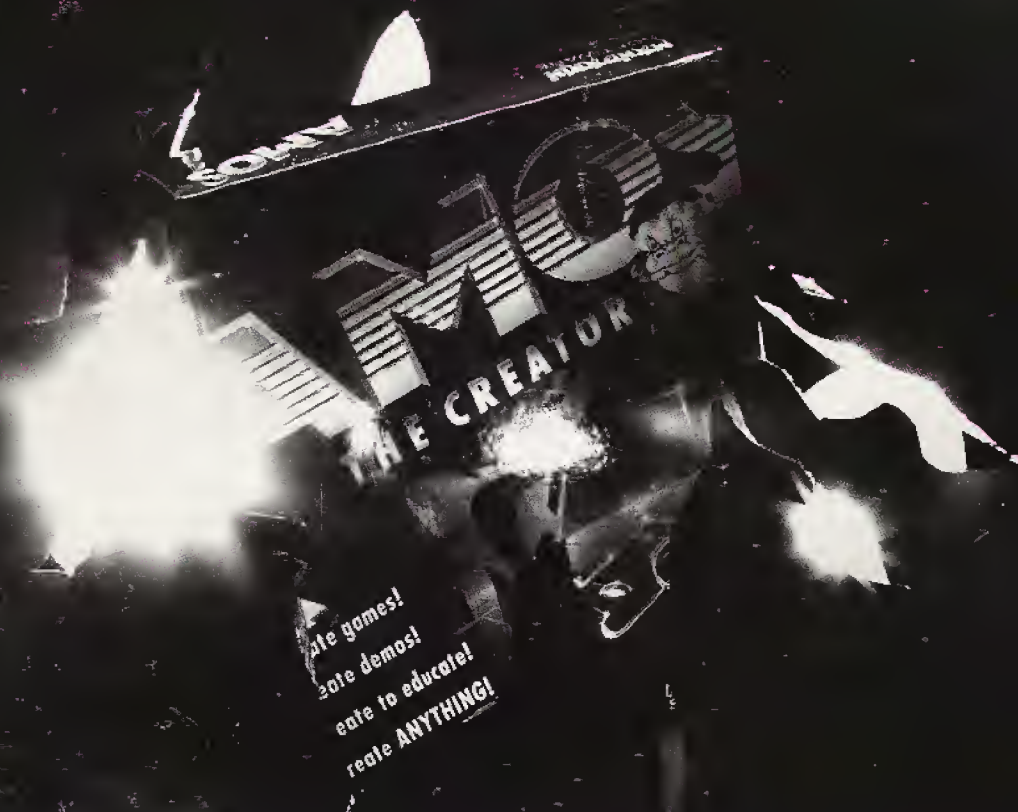
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Australian Amiga users are taking to AMOS like a duck to water. Never in the brief history of the Amiga has a programming language created such a ground swell of interest as AMOS. People who had not given a second thought to writing their own programs before have been amazed by the powerful array of commands in AMOS and by how simple they are to use.

With AMOS, you have full control of the Amigas hardware. There is no better, or easier to use language for music, graphics, sound or animation. Whether you're a complete novice or an experienced programmer, AMOS gives you the potential to create the game of your dreams.

AMOS is not, however, just for games. It has sophisticated data handling, full control over Input/Output ports, comprehensive mathematical functions and amazing logic controls. Using AMOS you can develop a database, structure a spreadsheet, work on a word processor or just cut loose and create the mega shoot-em-up to end all mega shoot-em-ups.

Full technical support is available through Pacronics to registered users, and for that special help, the Australian AMOS Users Club has been formed as a common forum to aid development of AMOS Programs.

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